

# 2009 Purdue University Combined Research and Extension Plan of Work

Status: Accepted  
Date Accepted: 07/25/08

## I. Plan Overview

### 1. Brief Summary about Plan Of Work

The planned programs for Indiana are

- natural resources and environment
- plants and their systems
- animals and their systems
- agricultural, natural resources, and biological engineering
- food/non-food products: development, processing, quality, and delivery
- economics, markets and policy
- human nutrition, food safety, human health and well being
- family well being
- youth development
- economic and community development

These planned programs were determined after reviewing input from stakeholder interviews and community sessions conducted throughout Indiana in 2003 and 2005. In 2005, nearly 4600 people participated in the interviews and community sessions. Under-served and under-represented populations were included in the interviews and community sessions. Approximately 10% of the 1700 interview participants were from underserved or under-represented populations. Interviews with stakeholders representing state level organizations and agencies were also conducted to assess the needs of the state. Stakeholders recognized Purdue as a trusted source of information for families, farms, businesses, and communities. They said that Purdue research and extension should continue to focus efforts to strengthen families, farms, businesses, and communities. Through continuing review provided by stakeholders in a variety of ways, these planned programs continue to be relevant for Purdue research and extension for 2009-2013.

In addition, many of the planned programs respond to issues identified in the State of Indiana's and Purdue University's strategic plans. According to the Indiana Department of Agriculture, Indiana is in a unique position to be a global leader in several food and agriculture areas. This conclusion is based on the state's productive land base, central location to the U.S. population, innovative research, and manufacturing expertise. Agriculture continues to have a significant role in Indiana's economy and represents an area for economic growth and development. In Indiana the food and agricultural sector generates directly or indirectly about twenty percent of the jobs and income in the state. With Indiana's diverse agricultural structure, Purdue research and extension can play a role in helping people become more productive and prosperous. Environmental safety and increases in bio-fuel production are also high priority policy issues in Indiana. Several areas targeted for growth by the State Department of Agriculture are included among the planned programs identified in this plan of work. The natural resources and environment, plants and their systems, animals and their systems, agricultural, natural resources, and biological engineering, and economics, markets, and policy planned programs describe research and extension efforts that address these issues.

Indiana's 2006 strategic plan for economic development stresses the need for a skilled constantly improving workforce, a culture of entrepreneurship, a pro-investment business climate, and strategic leadership development. Purdue's engagement strategic plan focuses on advancing Indiana's economic prosperity, enhancing educational and learning opportunities, and improving the quality of life of Hoosiers. Planned programs for Purdue research and extension include strategies for each of these factors. Five areas within the economic community development planned program focus on entrepreneurship, workforce development, public issues, education, community planning and visioning, and leadership and civic engagement. In addition, several other planned programs include efforts that relate to economic prosperity and improving the quality of life.

Stakeholders noted that families face many challenges including financial concerns, health issues, and the need to build positive relationships inside and outside the family. These types of challenges can impede healthy family functioning and decision making. Research and extension programs addressing topics such as effective parenting, caring for older adults, building self-esteem, managing stress, basic money management, and planning for the future will assist families in dealing with these challenges. Stakeholders encouraged Purdue to continue to work with family members across generations and in collaboration with others in the community, including schools and local and state agencies, to strengthen Hoosier families.

Developing Hoosier youth was a key theme stressed by stakeholders. The 4-H Youth Development program provides

opportunities, relationships, and support for youth to help them acquire the life skills necessary to meet the challenges of adolescence and adulthood. Youth development programs are aligned with specific mission areas including science, engineering and technology, healthy lifestyles, and citizenship education. With 20,000 volunteers involved in the Indiana 4-H youth development program, volunteer development opportunities are another essential part of this planned program. These volunteers are a vital component to positive youth development because of the on-going relationships that are established.

Improving the health of Hoosiers is another of the state's priorities. Indiana is near the top of the rankings of negative health issues, including obesity, smoking rate and the afflictions that accompany these: diabetes, high blood pressure, cancer, heart disease, and stroke. Purdue research and extension programs focus on the impact of dietary intake and exercise on human health, use and beneficial effects of phytochemicals, cereal processing and nutrition, calcium and bone metabolism, and impact of dietary intake and bone health. Educational programs are provided for the food and health care industries and consumers.

Consumers expect a wholesome and safe food supply yet outbreaks of foodborne illness indicate a need for ongoing research and education in this area. Purdue food safety programs focus efforts toward rapid detection of foodborne pathogens, food processing treatments to reduce pathogens, control of molds and mycotoxins, pest control, and the impact of human intestinal microflora and human disease. Effective educational programs translate the best practices for farmers, retailers, and consumers to help them adopt food-handling procedures that more effectively minimize food-safety risks.

One of the goals of the planned programs is to integrate research, outreach, and educational efforts to effectively address the issues identified. For some issues further integration of research and extension efforts and building more interdisciplinary teams is needed while for other issues those teams are already established. Another key strategy will be to continue to partner with industry, regulatory groups, and other stakeholders to increase the potential impact of the research and extension efforts.

Since one of the objectives of this plan is to provide relevant research and extension programs, continual review of progress toward ultimate goals and outcomes will continue to be an essential part of the process. Teams working on planned programs will provide continual review of progress toward goals and outcomes, including assessing whether additional topics should be added to a specific planned program because of changing needs. County Extension Boards continue to review planned programs on an annual basis to ensure that programs are continuing to address critical needs. PCARET, the Purdue Council on Agricultural Research, Extension and Teaching, meets semi-annually with county, district, and state administrators to discuss needs and how extension and research are or can address them. An annual conference also provides an opportunity for the state PCARET to review progress on planned programs and provide input on expectations of future needs and programs. In addition, specific research projects are peer reviewed before they are undertaken.

The ultimate goals of these planned programs are very similar to the goals of Purdue's engagement strategic plan: advancing Indiana's economic prosperity, enhancing educational and learning opportunities, and improving the quality of life of Hoosiers. In its own way, each planned program contributes to Indiana's economic prosperity, enhances educational opportunities, or improves the quality of life of Hoosiers.

#### Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2009	130.9	0.0	238.5	0.0
2010	130.9	0.0	238.5	0.0
2011	130.9	0.0	238.5	0.0
2012	130.0	0.0	238.5	0.0
2013	130.0	0.0	238.5	0.0

## II. Merit Review Process

### 1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- External Non-University Panel
- Combined External and Internal University External Non-University Panel

### 2. Brief Explanation

An internal panel will be appointed by the Director of Extension and Director of Research to review planned programs for relevancy in addressing critical needs. Teams working on various planned programs will provide continual review of progress toward goals and outcomes, including assessing whether additional topics should be added to a specific planned program because of changing needs. County Extension Boards will continue to review planned programs on an annual basis to ensure that programs are continuing to address critical needs. PCARET, the Purdue Council on Agricultural Research, Extension and Teaching, meets semi-annually with county, district, and state administrators to discuss needs and how extension and research are or can address them. An annual conference also provides an opportunity for the state PCARET to review progress on planned programs and provide input on expectations of future needs and programs.

In addition, Hatch research projects are subject to peer review prior to submission to USDA-CSREES. Review panels consist of at least three scientists that include faculty from at least two disciplines. Faculty members are strongly encouraged to collaborate across departments, schools, and universities. Multi-state projects are reviewed by regional department head associations and the Multi-State Review Committee composed of agricultural experiment station directors. Reviewers look for relevance, feasibility, building on previous research, approach and methods, scientific, and technical merit.

Academic departments are reviewed every 5 years by an external CSREES team. The research, extension, and teaching components of each department are examined during these reviews. These reviews provide an additional opportunity for merit review of research and extension programming.

## III. Evaluation of Multis & Joint Activities

### 1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

During 2003, Purdue Extension educators and Extension Board Members interviewed more than 2300 stakeholders to determine the programs and directions that Purdue Extension should pursue. In addition, interviews were conducted with key stakeholders representing statewide organizations and agencies. In 2005, additional interviews and community sessions were held throughout Indiana to validate the issues identified during the 2003 interviews. A key focus in the 2005 interviews and community sessions was reaching out to under-represented and underserved populations for their input. Stakeholders identified issues that they felt were critical needs in the state. Their input was essential in determining the planned programs and priorities. Strong families, businesses, and communities were of critical interest to the stakeholders so planned programs have been included to address those critical areas through research and educational programs.

Ongoing input from stakeholders is valued by Purdue Extension and Research programs. Annual review of programs and prioritizing of needs is encouraged and expected. Extension Boards and the Council on Agricultural Research, Extension, and Teaching (CARET) have opportunities to provide input on critical issues facing the state. Purdue College of Agriculture and departmental advisory groups also provide input on critical issues.

### 2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

Underserved and under-represented populations were included in the 2003 and 2005 stakeholder input interviews and community sessions. Their input was valuable in determining the planned programs. As a result, the needs of these populations will be addressed through the research and educational programs related to youth, families, farms, businesses, and communities.

### 3. How will the planned programs describe the expected outcomes and impacts?

Planned programs were developed by following the logic model to identify the situation, priorities, inputs, outputs, outcomes, assumptions, and external factors. Each planned program has specific outputs, outcomes, and impacts that relate to the situations and priorities. Target measures will be documented.

### 4. How will the planned programs result in improved program effectiveness and/or efficiency?

Planned programs will enable Purdue University to focus time and energy on issues that are important to stakeholders. This process of determining planned programs helps us focus our efforts on the most critical needs identified by the state. As a result of preparing an integrated research and extension plan, we better understand where we are integrating research and extension efforts and where we need to strengthen our integration of efforts. Identifying planned programs in this way requires us to assess progress toward the identified needs and enhances our ability to explain that progress to stakeholders.

## IV. Stakeholder Input

### 1. Actions taken to seek stakeholder input that encourages their participation

- Targeted invitation to selected individuals from general public
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder groups
- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder individuals

**Brief explanation.**

{NO DATA ENTERED}

### 2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

#### 1. Method to identify individuals and groups

- Open Listening Sessions
- Use Internal Focus Groups
- Needs Assessments
- Use Advisory Committees

**Brief explanation.**

{NO DATA ENTERED}

### 2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

#### 1. Methods for collecting Stakeholder Input

- Meeting with the general public (open meeting advertised to all)
- Survey of traditional Stakeholder individuals
- Meeting specifically with non-traditional individuals
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with invited selected individuals from the general public
- Meeting with traditional Stakeholder individuals

**Brief explanation**

{NO DATA ENTERED}

**3. A statement of how the input will be considered**

- To Identify Emerging Issues
- In the Action Plans
- Redirect Extension Programs
- To Set Priorities
- Redirect Research Programs

**Brief explanation.**

{NO DATA ENTERED}

## V. Planned Program Table of Content

S. NO.	PROGRAM NAME
1	Youth Development
2	Economics, Markets, and Policy
3	Agricultural, Natural Resources, and Biological Engineering
4	Food and Non-Food Products: Development, Processing, Quality, and Delivery
5	Family Well-Being
6	Human Nutrition, Food Safety and Human Health and Well-Being
7	Natural Resources and Environment
8	Plants and Their Systems
9	Animals and Their Systems
10	Economic and Community Development

**V(A). Planned Program (Summary)****Program #1****1. Name of the Planned Program**

Youth Development

**2. Brief summary about Planned Program**

The Indiana 4-H Youth Development Program will provide young people with sustained opportunities to gain a sense of belonging, independence, mastery, and generosity. When these essential elements of a positive youth development experience are in place, youth can: master skills to make positive life choices; effectively contribute to decision-making and act responsibly; and positively influence their communities and the general society.

4-H Youth Development Programs provide just such opportunities, relationships, and support for young people to help them acquire the life skills necessary to meet the challenges of adolescence and adulthood. On-going relationships with adults are essential to positive youth development. These relationships are established with adult volunteers who serve as positive role models for the young people who are affiliated with 4-H programs and activities.

**3. Program existence :** Mature (More than five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%		100%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Youth development is the natural process of developing one's capacities. While it occurs through young people's daily experiences with people, places, and possibilities, it is far too important to be left to chance. Positive youth development occurs from an intentional process that promotes positive outcomes for young people by providing opportunities, choices, relationships, and the support necessary for youth to fully participate. Youth development takes place in families, peer groups, schools, neighborhoods, and communities.

4-H Youth Development Programs provide just such opportunities, relationships, and support for young people to help them acquire the life skills necessary to meet the challenges of adolescence and adulthood. 4-H Youth Development uses hands-on, research-based educational opportunities that help youth become competent, caring, confident, connected, and contributing citizens of character. These experiences immediately yield new knowledge and provide young people with advanced skills in subjects of interest and provide clear and consistent moral precepts that effectively guide behavior. Young people, as a result, develop a willingness to accept new challenges and expect success, establish and maintain relationships at many levels, and respond to the needs and concerns of others.

Indiana 4-H Youth Development Programs will be aligned with three national 4-H mission areas: Science, Engineering and Technology; Healthy Lifestyles; Citizenship Education.

**2. Scope of the Program**

- In-State Extension
- Multistate Extension

**V(D). Planned Program (Assumptions and Goals)****1. Assumptions made for the Program**

4-H Youth Development is a programmatic priority of the Purdue Cooperative Extension Service. When Indiana communities and environments include sustained opportunities for young people to gain a sense of belonging, independence, mastery, and generosity, youth can: master skills to make positive life choices; effectively contribute to decision-making and act responsibly; and positively influence their communities and beyond. On-going relationships with adults are essential to positive youth development.

Indiana 4-H Youth Development includes programs and partnerships that are:

- Offered during times that children and youth are not in school and their parents are in need of safe, healthy, caring, and enriching environments for their children and youth;
- Designed to be developmentally appropriate for children and youth from kindergarten to twelfth grades;
- Designed to engage children and youth in experiential learning in partnership with adults;
- Designed on principles of youth development to address the interests of children and youth and their physical, cognitive, social and emotional needs;
- Designed to be experiential, engaging, and fun!

**2. Ultimate goal(s) of this Program**

The 4-H Youth Development Program will be sustained and will respond to the needs and changes of youth and their families. Recruitment and retention of youth through quality programs and environments will expand positive youth development throughout the state of Indiana. As a result, youth will become caring and contributing members of society through positive experiences in a diverse 4-H Youth Development Program.

An increase in the quality, effectiveness and accountability of volunteers in the 4-H Youth Development Program will result in increased numbers of both 4-H members and volunteers.

**V(E). Planned Program (Inputs)****1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	10.0	0.0	0.0	0.0
2010	10.0	0.0	0.0	0.0
2011	10.0	0.0	0.0	0.0
2012	10.0	0.0	0.0	0.0
2013	10.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

- Develop curriculum
- Conduct evaluation/research
- Participate in collaborations that have a youth focus
- Conduct educational workshops



- Provide youth and volunteer training and development
- Website development

## 2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>• Workshop</li> <li>• Group Discussion</li> <li>• Demonstrations</li> <li>• Education Class</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletters</li> <li>• Web sites</li> </ul>

## 3. Description of targeted audience

- Youth --- Grades K-12
- Volunteers
- Public/Private School Teachers

## V(G). Planned Program (Outputs)

### 1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	15000	250000	250000	150000
2010	15000	250000	250000	150000
2011	15000	250000	250000	150000
2012	15000	250000	250000	150000
2013	15000	250000	250000	150000

## 2. (Standard Research Target) Number of Patent Applications Submitted

### Expected Patent Applications

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

### 3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	0	5	0
2010	0	5	0
2011	0	5	0
2012	0	5	0
2013	0	5	0

**V(H). State Defined Outputs****1. Output Target**

- Number of new/revised curriculum topics

<b>2009 :5</b>	<b>2010 :5</b>	<b>2011 :5</b>	<b>2012 :5</b>	<b>2013 :5</b>
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- Number of evaluations conducted of 4-H Youth Development programs, events and activities

<b>2009 :25</b>	<b>2010 :25</b>	<b>2011 :25</b>	<b>2012 :25</b>	<b>2013 :25</b>
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- Number involved in youth focused community collaborations

<b>2009 :2500</b>	<b>2010 :4000</b>	<b>2011 :5000</b>	<b>2012 :5000</b>	<b>2013 :5000</b>
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- Number of quality, educational workshops for youth audiences

<b>2009 :150</b>	<b>2010 :150</b>	<b>2011 :150</b>	<b>2012 :150</b>	<b>2013 :150</b>
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- Number of volunteer development opportunities

<b>2009 :100</b>	<b>2010 :100</b>	<b>2011 :100</b>	<b>2012 :100</b>	<b>2013 :100</b>
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- Number of camp counselors trained

<b>2009 :10</b>	<b>2010 :10</b>	<b>2011 :10</b>	<b>2012 :10</b>	<b>2013 :10</b>
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- Number of volunteers participating in volunteer development opportunities

<b>2009 :50</b>	<b>2010 :50</b>	<b>2011 :50</b>	<b>2012 :50</b>	<b>2013 :50</b>
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- Number of youth participating in Career Development Events

<b>2009 :10</b>	<b>2010 :10</b>	<b>2011 :10</b>	<b>2012 :10</b>	<b>2013 :10</b>
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- Number of youth participating in educational workshops

<b>2009 :100</b>	<b>2010 :100</b>	<b>2011 :100</b>	<b>2012 :100</b>	<b>2013 :100</b>
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**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of volunteers reporting management of safe environments in which 4-H youth have the opportunity to learn.
2	Number of youth who increased knowledge of good character traits, goal setting, team work, communication techniques, decision making, and handling conflict
3	Number of 4-H youth who indicate they possess the skills to practice good character, to plan and organize community service activities, and have the skills to be actively engaged in local, state, and national issues
4	Number of youth at the culmination of their 4-H career who report life skills developed through the program, know how to set goals, work cooperatively in a team, communicate effectively, make decisions based on data and the opinions of others, honor individual differences and handle conflict.
5	Number of youth involved in community service activities
6	Number of counties that have established goals for increasing the types of geographic settings in which programs are offered and increasing the opportunity for youth to be engaged in 4-H club work with a likely result in an increase in the number of youth in 4-H Youth Development Programs.
7	Number of counties that experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.
8	Number of plans developed for volunteer development focused on educating volunteers to increase their understanding of life skill development, experiential learning, risk management, and group management.
9	Number of volunteers and Extension staff who report improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

**Outcome #1****1. Outcome Target**

Number of volunteers reporting management of safe environments in which 4-H youth have the opportunity to learn.

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**2000      **2010 :** 3000      **2011 :** 4000      **2012 :**4000      **2013 :** 4000

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #2****1. Outcome Target**

Number of youth who increased knowledge of good character traits, goal setting, team work, communication techniques, decision making, and handling conflict

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009 :**0      **2010 :** 0      **2011 :** 0      **2012 :**0      **2013 :** 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #3****1. Outcome Target**

Number of 4-H youth who indicate they possess the skills to practice good character, to plan and organize community service activities, and have the skills to be actively engaged in local, state, and national issues

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**0      **2010 :** 0      **2011 :** 0      **2012 :**0      **2013 :** 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #4****1. Outcome Target**

Number of youth at the culmination of their 4-H career who report life skills developed through the program, know how to set goals, work cooperatively in a team, communicate effectively, make decisions based on data and the opinions of others, honor individual differences and handle conflict.

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**1000      **2010 :** 1500      **2011 :** 2000      **2012 :**2000      **2013 :** 2000

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #5****1. Outcome Target**

Number of youth involved in community service activities

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**3000**2010 :** 4000**2011 :** 5000**2012 :**5000**2013 :** 5000**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #6****1. Outcome Target**

Number of counties that have established goals for increasing the types of geographic settings in which programs are offered and increasing the opportunity for youth to be engaged in 4-H club work with a likely result in an increase in the number of youth in 4-H Youth Development Programs.

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #7****1. Outcome Target**

Number of counties that experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**46**2010 :** 70**2011 :** 25**2012 :**46**2013 :** 10**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #8****1. Outcome Target**

Number of plans developed for volunteer development focused on educating volunteers to increase their understanding of life skill development, experiential learning, risk management, and group management.

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #9****1. Outcome Target**

Number of volunteers and Extension staff who report improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**2000**2010 :** 3000**2011 :** 4000**2012 :**4000**2013 :** 4000**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Each and every one of the above factors can (and at times may) influence a family's ability or desire to allow their children to participate in events/activities outside the home or family system. These factors also have the potential to negatively impact an individual or community perception of Extension or the 4-H Youth Development Program and/or staff we employ. Changes in appropriations (positive, negative, federal, state, or local) have a tremendous impact on the ability to deliver programming in local communities.

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study
- Other (ongoing needs assessment)

**Description**

On-going evaluations and needs assessments will be conducted with youth to determine effectiveness of programs, events and activities as well as gaps.

**2. Data Collection Methods**

- Sampling
- Whole population
- Mail
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Tests

**Description**

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #2

1. Name of the Planned Program

Economics, Markets, and Policy

2. Brief summary about Planned Program

The global and U.S. agricultural economy is experiencing unprecedented technological and economic change. The World Trade Organization, along with several bilateral country negotiations, is attempting to further liberalize trade and increase market access. This is especially important within the Doha Development Agenda to reduce poverty in low-income countries. U.S. domestic agricultural policy, under severe budget constraints, is attempting to reduce direct farmer subsidies and direct federal resources towards programs that improve environmental quality and help sustain rural communities. Biotechnology, growing demand for bio-fuels, and increased concentration of livestock production are increasing the opportunities and challenges for farm and business leaders as they seek to maximize profits in an environmentally and consumer sensitive fashion. Consumers increasingly are demanding low-cost, safe food with added convenience and value. This is creating tremendous marketing challenges within the food supply-chain. Purdue University economists, along with colleagues in other disciplines, and in other research institutions around the globe, are collecting the appropriate data and estimating complex global trade and policy models to ascertain the socioeconomic impacts of proposed international and domestic policy changes, potential threats to our food supply from dangerous pathogens or bioterrorism, implications of the adoption of new biotechnology-based crops, and the economic and environmental impacts of concentrated animal production systems. The Center for Trade Policy Analysis will conduct periodic conferences with trade and policy stakeholders. Faculty in the Center for Agricultural Business through degree and non-degree-based programs will provide the intellectual knowledge and training for agribusiness executives and managers. Finally, faculty and administrators in the College of Agriculture and other colleges and centers across the Purdue University campus are involved in various engagement and extension activities to create jobs and entrepreneurial skills among our citizens and to facilitate technology transfer and economic development throughout the State of Indiana. In addition, several farm management programs such as the annual Farm Management Tour, the Economic Outlook Campaign, and the Top Farmer Workshop will share business and marketing management concepts along with the transfer of new farming technologies. In cooperation with field extension staff, a series of programs are planned with various stakeholders on the economic impacts of proposed provisions in the next Farm Bill.

3. Program existence :     Mature (More than five years)

4. Program duration :     Long-Term (More than five years)

5. Expending formula funds or state-matching funds :             Yes

6. Expending other than formula funds or state-matching funds :             Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage



KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	15%		15%	
602	Business Management, Finance, and Taxation	8%		8%	
603	Market Economics	13%		13%	
604	Marketing and Distribution Practices	27%		27%	
605	Natural Resource and Environmental Economics	11%		11%	
606	International Trade and Development	11%		11%	
607	Consumer Economics	7%		7%	
609	Economic Theory and Methods	3%		3%	
610	Domestic Policy Analysis	4%		4%	
611	Foreign Policy and Programs	1%		1%	
	<b>Total</b>	100%		100%	

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

The global and domestic agricultural economy is facing unprecedented technological, policy, and social/cultural changes. This can have substantial socioeconomic and environmental impacts on Indiana since the food and agricultural sector generates directly or indirectly about 20% of the jobs and income in the state. Economists, along with colleagues in several other disciplines, will use appropriate primary and secondary data and statistical and simulation models to assess these impacts. Results will be shared in a variety of ways with policy makers, farmers, agribusiness leaders, and other stakeholders. Such analysis is critical for public sector policymaking as well as for private sector investment, production, and marketing decisions

### 2. Scope of the Program

- In-State Research
- In-State Extension
- Multistate Integrated Research and Extension
- Multistate Extension
- Integrated Research and Extension
- Multistate Research

#### V(D). Planned Program (Assumptions and Goals)

##### 1. Assumptions made for the Program

While Federal formula funding for research and extension will remain important to accomplish these efforts, increasingly the faculty will require Federal competitive grant support from agencies such as USDA-NRI, NSF, NIH, DOE, and other agencies. Commodity groups and private foundation support can be helpful to carry-out this mission-oriented research on agribusiness and economic issues

##### 2. Ultimate goal(s) of this Program

The ultimate goal is to increase the profitability and efficiency of the food, agricultural, and natural resource system in a sustainable fashion.

#### V(E). Planned Program (Inputs)

##### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	22.0	0.0	18.0	0.0
2010	22.0	0.0	18.0	0.0
2011	22.0	0.0	18.0	0.0
2012	22.0	0.0	18.0	0.0
2013	22.0	0.0	18.0	0.0

#### V(F). Planned Program (Activity)

##### 1. Activity for the Program

•The Center for Trade Policy Analysis will conduct workshops with stakeholders on the expected economic impacts of trade and domestic agricultural policy.

•The New Ventures Team and staff in the Agricultural Innovation and Commercialization Center will offer training programs throughout the state on entrepreneurship and starting new value-added businesses.

•Agricultural policy workshops will be conducted with farm groups such as the Indiana Farm Bureau and the Farm Policy Study Group.

•Websites such as the Agricultural Economic Reports will provide timely analysis on marketing, management, and policy issues.

•Econometric and simulation models will be specified and validated to determine the socioeconomic impacts of proposed international trade and domestic agricultural policy proposals.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● One-on-One Intervention</li> <li>● Other 1 (Distance Education Programs)</li> <li>● Workshop</li> <li>● Education Class</li> <li>● Other 2 (Economic Outlook Campaign)</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (Extension Publications)</li> <li>● Public Service Announcement</li> <li>● Web sites</li> <li>● Newsletters</li> </ul>

**3. Description of targeted audience**

- Indiana farmers
- State and Federal government policy makers, especially the Indiana State Department of Agriculture and the Office of the Secretary of Agriculture
- Indiana general farm and commodity organizations such as Indiana Farm Bureau, Indiana Pork Producers, Indiana Soybean Alliance
- Agricultural input supply industry managers such as Monsanto, DuPont-Pioneer, John Deere, Beck Hybrids, Dow-AgroSciences
- Agricultural marketing firms such as Tate & Lyle, ADM, Countrymark, Cargill
- International trade organizations and officials including the Office of the U.S. Special Trade Representative and WTO in Geneva

**V(G). Planned Program (Outputs)****1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	10000	25000	250	2000
2010	10000	25000	250	2000
2011	10000	25000	250	2000
2012	10000	25000	250	2000
2013	10000	25000	250	2000

**2. (Standard Research Target) Number of Patent Applications Submitted****Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	25	15	0
2010	25	15	0
2011	25	15	0
2012	25	15	0
2013	25	15	0

**V(H). State Defined Outputs****1. Output Target**

- Number of programs with state and federal government officials on trade and farm policy development and impact assessment

**2009 :10                      2010 :10                      2011 : 10                      2012 :10                      2013 :10**

- Number of programs offered to food and agri-business leaders by the Center for Food and Agricultural Business

**2009 :15                      2010 :15                      2011 : 15                      2012 :15                      2013 :15**

- Number and quality of peer reviewed research publications in professional journals on economics, management, markets, new and small business development, and policy

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of programs with Indiana farmers on farm management and commodity marketing such as the annual Top Crop Farmer Workshop, Farm Management Tour, and the Outlook Campaign

**2009 :50                      2010 :50                      2011 : 50                      2012 :50                      2013 :50**

- Number of programs offered to tax professionals, attorneys, lenders and other professionals advising farmers and small business owners

**2009 :20                      2010 :20                      2011 : 20                      2012 :20                      2013 :20**

- Number of programs offered to entrepreneurs and small business owners as part of the Agricultural Innovation and Commercialization Center/New Ventures

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of programs on the economics of biofuels

**2009 :10                      2010 :10                      2011 : 10                      2012 :10                      2013 :10**

- Number of estate planning programs offered to farm and family business owners

**2009 :5                      2010 :5                      2011 : 5                      2012 :5                      2013 :5**

- Number of risk management education programs

**2009 :5                      2010 :5                      2011 : 5                      2012 :5                      2013 :5**

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of participants who increase their knowledge of commodity markets and marketing contracts
2	Number of Indiana farmers who increase the use of commodity markets and marketing contracts to reduce price risk and increase profitability
3	Number of Indiana farms that increase productivity and profitability
4	Number of farm and commodity organization members who increase their knowledge of the potential economic impacts of alternative farm commodity program provisions such as implications for exports, domestic utilization and price, farm income, and government farm program expenditures
5	Number of research-based studies, publications, and reports for policy organization members and legislators on the consequences of their international trade and farm commodity program choices in Farm Bill and related federal legislation
6	Number of research-based analyses of trade liberalization and market-oriented policies to guide government policy-makers as they draft appropriate legislation to increase the competitiveness of U.S. agriculture in a global market
7	Number of food and agribusiness firms, private investors, commodity organization leaders, and government officials who increase their knowledge of the economic potential to increase the number and size of new and current value-added agricultural industries such as grain and livestock processing.
8	Number of new value-added agricultural associated small businesses in Indiana
9	Number of farmers generating additional farm income from additional market opportunities for grain, livestock, and specialty crops
10	Number of participants who increase their knowledge of tax and legal issues affecting farmers and small businesses
11	Number of food and agribusiness managers who increase their knowledge of marketing and sales strategies, general business management, and making decisions under highly uncertain situations
12	Number of entrepreneurs and small businesses that improve efficiency and increase profitability
13	Number of potential entrepreneurs who avoid making bad investment decisions following analysis they did with assistance from AICC/New Ventures programs and resources

**Outcome #1****1. Outcome Target**

Number of participants who increase their knowledge of commodity markets and marketing contracts

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :25****2010 : 25****2011 : 25****2012 :25****2013 : 25****3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 604 - Marketing and Distribution Practices

**Outcome #2****1. Outcome Target**

Number of Indiana farmers who increase the use of commodity markets and marketing contracts to reduce price risk and increase profitability

**2. Outcome Type :** Change in Action Outcome Measure**2009 :30****2010 : 30****2011 : 30****2012 :30****2013 : 30****3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 604 - Marketing and Distribution Practices

**Outcome #3****1. Outcome Target**

Number of Indiana farms that increase productivity and profitability

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :5000****2010 : 5000****2011 : 5000****2012 :5000****2013 : 5000****3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

**Outcome #4****1. Outcome Target**

Number of farm and commodity organization members who increase their knowledge of the potential economic impacts of alternative farm commodity program provisions such as implications for exports, domestic utilization and price, farm income, and government farm program expenditures

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :50****2010 : 50****2011 : 50****2012 :50****2013 : 50****3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 606 - International Trade and Development
- 610 - Domestic Policy Analysis

**Outcome #5****1. Outcome Target**

Number of research-based studies, publications, and reports for policy organization members and legislators on the consequences of their international trade and farm commodity program choices in Farm Bill and related federal legislation

**2. Outcome Type :** Change in Action Outcome Measure**2009 :10****2010 : 10****2011 : 10****2012 :10****2013 : 10****3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 606 - International Trade and Development
- 610 - Domestic Policy Analysis

**Outcome #6****1. Outcome Target**

Number of research-based analyses of trade liberalization and market-oriented policies to guide government policy-makers as they draft appropriate legislation to increase the competitiveness of U.S. agriculture in a global market

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :5****2010 : 5****2011 : 5****2012 :5****2013 : 5****3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 606 - International Trade and Development

**Outcome #7****1. Outcome Target**

Number of food and agribusiness firms, private investors, commodity organization leaders, and government officials who increase their knowledge of the economic potential to increase the number and size of new and current value-added agricultural industries such as grain and livestock processing.

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :50****2010 : 50****2011 : 50****2012 :50****2013 : 50****3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

**Outcome #8****1. Outcome Target**

Number of new value-added agricultural associated small businesses in Indiana

**2. Outcome Type :** Change in Action Outcome Measure

2009 :15                      2010 : 20                      2011 : 25                      2012 :25                      2013 : 25

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

**Outcome #9****1. Outcome Target**

Number of farmers generating additional farm income from additional market opportunities for grain, livestock, and specialty crops

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :50                      2010 : 50                      2011 : 50                      2012 :50                      2013 : 50

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

**Outcome #10****1. Outcome Target**

Number of participants who increase their knowledge of tax and legal issues affecting farmers and small businesses

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :50                      2010 : 50                      2011 : 50                      2012 :50                      2013 : 50

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation

**Outcome #11****1. Outcome Target**

Number of food and agribusiness managers who increase their knowledge of marketing and sales strategies, general business management, and making decisions under highly uncertain situations



**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation

**Outcome #12****1. Outcome Target**

Number of entrepreneurs and small businesses that improve efficiency and increase profitability

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**10**2010 :** 15**2011 :** 20**2012 :**25**2013 :** 25**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation

**Outcome #13****1. Outcome Target**

Number of potential entrepreneurs who avoid making bad investment decisions following analysis they did with assistance from AICC/New Ventures programs and resources

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**30**2010 :** 30**2011 :** 30**2012 :**30**2013 :** 10**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Competing Programatic Challenges
- Government Regulations
- Other (Diffusion of new technology)
- Natural Disasters (drought,weather extremes,etc.)
- Public Policy changes
- Competing Public priorities
- Economy

**Description**

Other: diffusion of new technology such as biotechnology or precision agriculture

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Comparison between locales where the program operates and sites without program intervention
- Time series (multiple points before and after program)
- Other (periodic assessment of policy)
- Before-After (before and after program)
- Case Study
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- After Only (post program)
- Retrospective (post program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- During (during program)

**Description**

Other: periodic assessment of policy choices made by state and national leaders

**2. Data Collection Methods**

- On-Site
- Journals
- Mail
- Structured
- Sampling
- Case Study

**Description**

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #3

1. Name of the Planned Program

Agricultural, Natural Resources, and Biological Engineering

2. Brief summary about Planned Program

Agricultural and biological engineering embraces a broad array of research challenges. Development of economical and technically efficient processes to transform agronomic crops and biomass into liquid fuels is critical for our nation's future. Interdisciplinary teams of scientists are investigating the role of enzymes, chemical interactions, and processing techniques to enhance the conversion of biological materials into fuels for on and off-road vehicles, aircrafts, and as heating oil. To reduce air pollution, monitoring studies of livestock operations are being conducted to assist the U.S. Environmental Protection Agency with the development of science-based regulatory guidelines. Engineering and life science faculty are collaboratively designing bio-sensors to more efficiently detect food pathogens and contaminants. Optimal nutrient management from large-scale livestock operations is critical from an environmental safety and a more efficient and profitable cropping systems perspective. Finally, with the advent of GPS and other electronic and nanotechnology discoveries new machine sensors and data collection and management systems are being developed. Purdue University faculty are collaborating not only on the research associated with these new engineering and life science-based systems, but are also closely involved in engagement activities with Federal and State regulatory agencies, farm and agribusiness managers, and community leaders as they share their research results. Enhanced environmental safety and increases in bio-fuels production are high priority policy issues in Indiana. A statewide energy summit, nutrient management workshops, and community-level extension education programs are being developed to share research results and dialogue with key stakeholders on the various aspects of this knowledge area.

3. Program existence :     Mature (More then five years)

4. Program duration :     Long-Term (More than five years)

5. Expending formula funds or state-matching funds :             Yes

6. Expending other than formula funds or state-matching funds :             Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
401	Structures, Facilities, and General Purpose Farm Supplies	19%		19%	
402	Engineering Systems and Equipment	27%		27%	
403	Waste Disposal, Recycling, and Reuse	38%		38%	
404	Instrumentation and Control Systems	9%		9%	
405	Drainage and Irrigation Systems and Facilities	7%		7%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

There is rapidly growing public interest in bio-fuels and sustainable agricultural production systems. To achieve these societal goals to reduce U.S. dependence on foreign oil and to produce food and fiber in an environmentally acceptable manner, new technologies that embrace both the engineering and life sciences must come together. Purdue University faculty in several departments such as Agricultural and Biological Engineering, Agronomy, Food Science, Agricultural Economics, and others across the campus including several centers in Discovery Park will conduct collaborative research and disseminate research results, including the patenting and licensing of discoveries through the Office of Technology Commercialization, to industry leaders, policymakers, and the general public through educational programs, publications, websites, media releases, etc.

#### 2. Scope of the Program

- In-State Extension
- Multistate Integrated Research and Extension
- Multistate Extension
- Multistate Research
- In-State Research
- Integrated Research and Extension

### V(D). Planned Program (Assumptions and Goals)

#### 1. Assumptions made for the Program

While Federal formula and state funding will be essential to carry-out the applied research and extension aspects of this mission oriented program, large competitive extramural grants will be critical as well. University laboratories and infrastructure will be committed to efforts ranging from nanotechnology laboratories to more traditional bench science to pilot laboratory scale-ups to field and agronomic studies on the production, harvesting, storage, and transportation of bio-based crops. Team efforts including applied research and extension specialists in several disciplines will address nutrient management, especially directed towards the interface between the livestock and cropping sectors.

#### 2. Ultimate goal(s) of this Program

These research and outreach efforts should reduce U.S. foreign oil dependency, increase the profitability of agriculture, reduce environmental degradation, and create job and economic development opportunities throughout rural America. Moreover, better

nutrient management will increase the profitability of the livestock sector, reduce the use of commercial fertilizer, and reduce water and air pollution

### V(E). Planned Program (Inputs)

#### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	5.9	0.0	15.5	0.0
2010	5.9	0.0	15.5	0.0
2011	5.9	0.0	15.5	0.0
2012	5.9	0.0	15.5	0.0
2013	5.9	0.0	15.5	0.0

### V(F). Planned Program (Activity)

#### 1. Activity for the Program

- Energy workshops and educational programs will be conducted throughout the state that involve key research scientists ranging from chemical engineers to logistics experts to economists
- A team of scientists including experts in animal nutrition, soil fertility, and farm management will conduct research and work with farmers to reduce water pollution, especially phosphorus
- Food safety experts, along with microbiologists and nanotechnology experts, will develop sensors that will enhance food safety and risks from bioterrorism
- Livestock facilities will be designed and analyzed to determine optimal nutrient management systems from an environmental and cropping systems perspective
- Electro-hydraulic sensors and off-road machine operation systems will be designed and tested.
- Scientists will monitor air quality of selected concentrated livestock systems on farms in multiple states to facilitate the determination of science-based EPA regulatory standards.

#### 2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Education Class</li> <li>● Demonstrations</li> <li>● One-on-One Intervention</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (Extension Publications)</li> <li>● Web sites</li> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> </ul>

#### 3. Description of targeted audience

- Indiana livestock producers, especially those managing confined feeding operations
- Crop farmers interested in applying animal wastes to enhance yields and reduce water pollution
- Stakeholders in the bio-energy industry including Country Mark Cooperative, Indiana State Department of Agriculture, Indiana Soybean Alliance, Indiana Corn Growers, grain processors such as ADM, Cargill, and Tate & Lyle
- Officials with federal (EPA) and state (IDEM) regulatory agencies
- Off-road farm and industrial equipment manufacturers will be contacted and offered patent licensing opportunities as sensors for machine operation and maintenance are developed and tested

**V(G). Planned Program (Outputs)****1. Standard output measures****Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	5000	40000	2500	5000
2010	5000	40000	2500	5000
2011	5000	40000	2500	5000
2012	5000	40000	2500	5000
2013	5000	40000	2500	5000

**2. (Standard Research Target) Number of Patent Applications Submitted****Expected Patent Applications**

2009 :3                      2010 :3                      2011 :3                      2012 :3                      2013 :3

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	20	5	0
2010	20	5	0
2011	20	5	0
2012	20	5	0
2013	20	5	0

**V(H). State Defined Outputs****1. Output Target**

- Number of educational workshops and seminars on nutrient management and air quality

2009 :15                      2010 :15                      2011 :15                      2012 :15                      2013 :15

- Number of research-based educational programs on bio-fuel production, distribution, and policy

2009 :25                      2010 :25                      2011 :25                      2012 :25                      2013 :25

- Number of websites and publications developed

2009 :20                      2010 :20                      2011 :20                      2012 :20                      2013 :20

- Number of patents applied for and licensing arrangements entered into with off-road farm and industrial equipment manufacturers

2009 :5                      2010 :5                      2011 :5                      2012 :5                      2013 :5

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of producers who increase awareness and knowledge concerning science-based methods to manage animal wastes so as to minimize potential soil and air pollution
2	Number of environmental pollution incidents caused by inappropriate application of animal wastes to soils or emission of animal odors from production facilities
3	Number of farmers who enhance soil fertility and reduce soil pollution through less reliance on commercial fertilizer and increased reliance on properly applied animal waste
4	Number of energy producers, farmers, and consumers who increase their knowledge of the technical and economic implications of increased use of Indiana produced corn and soybeans in bio-fuels
5	Number of technologies developed and disseminated that will increase the efficiency of bio-fuel production
6	Number of bushels of Indiana produced corn and soybeans used in bio-fuels
7	Number of farmers who increase their knowledge of livestock building designs that are energy efficient as well as more animal welfare friendly
8	Number of farmers who optimize livestock welfare through the design of efficient and animal sensitive farm structures.
9	Number of farmers who increase total livestock production and profitability through the adoption of building designs that are energy efficient as well as more animal welfare friendly
10	Number of livestock facilities designed to minimize odor emissions and potential air pollution
11	Number of students with increased awareness and knowledge of energy and water conservation and food safety
12	Number of turfgrass specialists with increased knowledge of nutrient and soil management
13	Number of Amish farmers with increased awareness of farm safety and health

**Outcome #1****1. Outcome Target**

Number of producers who increase awareness and knowledge concerning science-based methods to manage animal wastes so as to minimize potential soil and air pollution

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :50

2010 : 50

2011 : 50

2012 :50

2013 : 50

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse

**Outcome #2****1. Outcome Target**

Number of environmental pollution incidents caused by inappropriate application of animal wastes to soils or emission of animal odors from production facilities

**2. Outcome Type :** Change in Action Outcome Measure

2009 :8

2010 : 5

2011 : 3

2012 :2

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse

**Outcome #3****1. Outcome Target**

Number of farmers who enhance soil fertility and reduce soil pollution through less reliance on commercial fertilizer and increased reliance on properly applied animal waste

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :10

2010 : 15

2011 : 20

2012 :20

2013 : 20

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse

**Outcome #4****1. Outcome Target**

Number of energy producers, farmers, and consumers who increase their knowledge of the technical and economic implications of increased use of Indiana produced corn and soybeans in bio-fuels



**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**200**2010 :** 300**2011 :** 400**2012 :**500**2013 :** 500**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

**Outcome #5****1. Outcome Target**

Number of technologies developed and disseminated that will increase the efficiency of bio-fuel production

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**1**2010 :** 2**2011 :** 3**2012 :**4**2013 :** 5**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

**Outcome #6****1. Outcome Target**

Number of bushels of Indiana produced corn and soybeans used in bio-fuels

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**210000000**2010 :** 265000000**2011 :** 300000000**2012 :**300000000**2013 :** 300000000**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

**Outcome #7****1. Outcome Target**

Number of farmers who increase their knowledge of livestock building designs that are energy efficient as well as more animal welfare friendly

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**20**2010 :** 25**2011 :** 30**2012 :**30**2013 :** 35**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 401 - Structures, Facilities, and General Purpose Farm Supplies

**Outcome #8****1. Outcome Target**

Number of farmers who optimize livestock welfare through the design of efficient and animal sensitive farm structures.

**2. Outcome Type :** Change in Action Outcome Measure

2009 :15                      2010 : 20                      2011 : 25                      2012 :25                      2013 : 25

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 401 - Structures, Facilities, and General Purpose Farm Supplies

**Outcome #9****1. Outcome Target**

Number of farmers who increase total livestock production and profitability through the adoption of building designs that are energy efficient as well as more animal welfare friendly

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :20                      2010 : 30                      2011 : 30                      2012 :30                      2013 : 30

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 402 - Engineering Systems and Equipment

**Outcome #10****1. Outcome Target**

Number of livestock facilities designed to minimize odor emissions and potential air pollution

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :10                      2010 : 15                      2011 : 20                      2012 :25                      2013 : 20

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 401 - Structures, Facilities, and General Purpose Farm Supplies

**Outcome #11****1. Outcome Target**

Number of students with increased awareness and knowlege of energy and water conservation and food safety

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :100                      2010 : 100                      2011 : 100                      2012 :100                      2013 : 100

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse

**Outcome #12****1. Outcome Target**

Number of turfgrass specialists with increased knowledge of nutrient and soil management

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :100**2010** : 100**2011** : 100**2012** :100**2013** : 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

**Outcome #13****1. Outcome Target**

Number of Amish farmers with increased awareness of farm safety and health

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :100**2010** : 100**2011** : 100**2012** :100**2013** : 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Economy
- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Public Policy changes
- Competing Public priorities
- Competing Programatic Challenges
- Appropriations changes

**Description**

{NO DATA ENTERED}

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- Before-After (before and after program)
- Comparison between locales where the program operates and sites without program intervention
- Case Study
- Other (hits and use of web site)
- After Only (post program)
- During (during program)
- Retrospective (post program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Time series (multiple points before and after program)

**Description**

Other: number of hits and use of web site educational material

**2. Data Collection Methods**

- Sampling
- Unstructured
- Case Study
- Structured
- Mail
- Telephone

**Description**

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #4

1. Name of the Planned Program

Food and Non-Food Products: Development, Processing, Quality, and Delivery

2. Brief summary about Planned Program

This program focuses on conversion of inorganic and organic materials into edible food products and non-food products. In the conversion of food materials, focused commodities will include pork (processing and quality), grains (processing and nutrition), dairy products (processing and quality), and aquaculture (processing, yield, and quality). Research and extension programs will be developed for better separation of bio-products, improved biomass conversion, and computational modeling approaches to understand and improve processes. Thermal and non-thermal processing systems will also be optimized to improve the overall product food quality and safety. Key research and extension integrated groups will include the Post-Harvest Processing Grain team and the Computer Integrated Food Manufacturing Center. For non-food products, much of the emphasis will be dedicated to bio-mass energy and bio-based fuels. Considerable expertise exists on the Purdue campus to develop alternative fuels from corn, soybeans, and starch. Systems will be designed that integrate agricultural and engineering approaches to optimize efficiency and yield and an economic analysis will be performed to identify appropriate applications. Because of the interest in Indiana, a major commodity that will receive attention is wood and wood products, especially for the conversion into furniture. Two important integrated research and extension groups that will be active in studying processing of non-food products include the Laboratory of Renewable Resources Engineering and the Wood Research Laboratory. In the development of both food and non-food products, effective and constant communication with stakeholders, from the farm to processing, will be critical for success.

3. Program existence :     Mature (More than five years)

4. Program duration :     Long-Term (More than five years)

5. Expending formula funds or state-matching funds :             Yes

6. Expending other than formula funds or state-matching funds :             Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	31%		31%	
502	New and Improved Food Products	22%		22%	
503	Quality Maintenance in Storing and Marketing Food Products	18%		18%	
504	Home and Commercial Food Service	2%		2%	
511	New and Improved Non-Food Products and Processes	25%		25%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	2%		2%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

Though consumers are the end beneficiary of well-engineered processed systems for food and non-food products, the product flow includes research and education spanning from growing crops in the field, to the harvesting of raw materials, through the different unit operations of processing, to production of the finished packaged product, and finally finishing with consumer marketing. The production of food and non-food related agricultural products are improved as engineering, agricultural, and economic scientists collaborate. To be successful, all of these disciplines must be well understood and then tested. The knowledge learned from basic and applied research projects will be translated through outreach programs directed to our stakeholders using a wide variety of delivery mechanisms. The overarching goal would be to improve processing efficiency and product quality and to translate this knowledge into practice. Without question, more efforts must be placed on studying and developing novel bio-based systems for alternative energy. The expertise at Purdue is well suited to study bio-based fuels and other opportunities related to production of food and non-food materials.

#### 2. Scope of the Program

- Multistate Extension
- Multistate Integrated Research and Extension
- Multistate Research
- In-State Extension
- Integrated Research and Extension
- In-State Research

### V(D). Planned Program (Assumptions and Goals)

#### 1. Assumptions made for the Program

The expectation is that funding will remain constant over the next five year period, but, there will be opportunities for increased funding in some areas. For example, funding for bio-based fuels is expected to grow as our country seeks alternatives

to oil based energy and reliance on imported products. Seeking partnerships with foreign countries may also provide an important source of funding and opportunities to develop food and non-food processing technologies. Several integrated research and extension centers and groups will be collaborating to solve these problems. New strategically integrated teams will need to be assembled to confront new challenges.

## 2. Ultimate goal(s) of this Program

The goal of this overall program is to integrate agricultural and engineering disciplines and develop novel and effective processing technologies to improve the efficiency and quality of food and non-food products

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	3.5	0.0	14.5	0.0
2010	3.5	0.0	14.5	0.0
2011	3.5	0.0	14.5	0.0
2012	3.5	0.0	14.5	0.0
2013	3.5	0.0	14.5	0.0

## V(F). Planned Program (Activity)

### 1. Activity for the Program

- conduct research
- develop programs and conduct workshops
- develop extension curricula
- provide outreach training programs
- establish distance education programs and web-based programs
- coordinate meetings with important stakeholders (researchers, industry, farmers, regulatory, etc.)
- work with media

### 2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Demonstrations</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (Extension Publications)</li> <li>● Other 2 (Distance Education Programs)</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Public Service Announcement</li> <li>● Web sites</li> </ul>

### 3. Description of targeted audience

There are a wide variety of intended audiences including:

- Farmers
- Animal production personnel
- Plant production personnel
- Biofuels processing industry personnel
- Food manufacturing and processing plant personnel
- Non-food manufacturing plant personnel

- Professional engineers
- State and county health departments
- Federal regulatory officials
- State industry associations

**V(G). Planned Program (Outputs)****1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	1000	10000	100	1000
2010	1000	10000	100	1000
2011	1000	10000	100	1000
2012	1000	10000	100	1000
2013	1000	10000	100	1000

**2. (Standard Research Target) Number of Patent Applications Submitted****Expected Patent Applications**

**2009 :1                      2010 :1                      2011 : 1                      2012 : 1                      2013 : 1**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	10	5	0
2010	10	5	0
2011	10	5	0
2012	10	5	0
2013	10	5	0

**V(H). State Defined Outputs****1. Output Target**

- Number of programs offered to farmers or production agriculture specialists

**2009 :10                      2010 :10                      2011 : 10                      2012 :10                      2013 :10**

- Number of programs offered to the food industry

**2009 :10                      2010 :10                      2011 : 10                      2012 :10                      2013 :10**

- Number of programs offered to the non-food industry

**2009 :5                      2010 :5                      2011 : 5                      2012 :5                      2013 :5**

- Number of research projects on bioprocessing



	2009 :5	2010 :5	2011 :5	2012 :5	2013 :5
● Number of research projects on air quality					
	2009 :1	2010 :1	2011 :1	2012 :1	2013 :1
● Number of research projects on grain storage and processing					
	2009 :5	2010 :5	2011 :5	2012 :5	2013 :5
● Number of research projects related to dairy products					
	2009 :3	2010 :3	2011 :3	2012 :3	2013 :3
● Number of research projects related to aquaculture products					
	2009 :3	2010 :3	2011 :3	2012 :3	2013 :3
● Number of research projects related to enology and viticulture					
	2009 :10	2010 :10	2011 :10	2012 :10	2013 :10
● Number of research project related to food processing					
	2009 :10	2010 :10	2011 :10	2012 :10	2013 :10
● Number of research projects related to food quality					
	2009 :5	2010 :5	2011 :5	2012 :5	2013 :5
● Number of workshops offered to the general public					
	2009 :1	2010 :1	2011 :1	2012 :1	2013 :1

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of persons gaining knowledge in bioprocessing
2	Number of products produced using new bioprocessing technologies
3	Number of new products produced by new bioprocessing, bioenergy, and biotechnology
4	Number of new bioprocessing techniques used to increase efficiency
5	Number of persons gaining knowledge in food processing and food processing automation
6	Numbers of persons or companies adopting new food automation technologies
7	Number of food and non-food automation technologies used
8	Number of persons gaining knowledge in air quality control systems
9	Numbers of animal production facilities adopting better air quality practices
10	Number of production facilities with improved air quality
11	Number of persons gaining knowledge in grain processing
12	Numbers of persons and companies adopting better grain processing practices
13	Number of persons gaining knowledge in enology and viticulture
14	Number of persons gaining knowledge of government programs
15	Number of persons gaining knowledge of marketing trends
16	Number of persons gaining knowledge of food packaging applications

**Outcome #1****1. Outcome Target**

Number of persons gaining knowledge in bioprocessing

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 511 - New and Improved Non-Food Products and Processes

**Outcome #2****1. Outcome Target**

Number of products produced using new bioprocessing technologies

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 511 - New and Improved Non-Food Products and Processes

**Outcome #3****1. Outcome Target**

Nnumber of new products produced by new bioprocessing, bioenergy, and biotechnology

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**1**2010 :** 1**2011 :** 1**2012 :**1**2013 :** 1**3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 511 - New and Improved Non-Food Products and Processes

**Outcome #4****1. Outcome Target**

Number of new bioprocessing techniques used to increase efficiency

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**3**2010 :** 3**2011 :** 3**2012 :**3**2013 :** 3**3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 511 - New and Improved Non-Food Products and Processes

**Outcome #5****1. Outcome Target**

Number of persons gaining knowledge in food processing and food processing automation

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0	2010 : 0	2011 : 0	2012 :0	2013 : 0
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**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies

**Outcome #6****1. Outcome Target**

Numbers of persons or companies adopting new food automation technologies

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0	2010 : 0	2011 : 0	2012 :0	2013 : 0
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**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies
- 504 - Home and Commercial Food Service

**Outcome #7****1. Outcome Target**

Number of food and non-food automation technologies used

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :5	2010 : 5	2011 : 5	2012 :5	2013 : 5
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**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies
- 511 - New and Improved Non-Food Products and Processes

**Outcome #8****1. Outcome Target**

Number of persons gaining knowledge in air quality control systems

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0	2010 : 0	2011 : 0	2012 :0	2013 : 0
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**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

**Outcome #9****1. Outcome Target**

Numbers of animal production facilities adopting better air quality practices

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

**Outcome #10****1. Outcome Target**

Number of production facilities with improved air quality

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :3                      2010 : 3                      2011 : 3                      2012 :3                      2013 : 3

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

**Outcome #11****1. Outcome Target**

Number of persons gaining knowledge in grain processing

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 503 - Quality Maintenance in Storing and Marketing Food Products

**Outcome #12****1. Outcome Target**

Numbers of persons and companies adopting better grain processing practices

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies

**Outcome #13****1. Outcome Target**

Number of persons gaining knowledge in enology and viticulture

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :100**2010** : 100**2011** : 100**2012** :100**2013** : 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 502 - New and Improved Food Products

**Outcome #14****1. Outcome Target**

Number of persons gaining knowledge of government programs

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :40**2010** : 40**2011** : 40**2012** :40**2013** : 40**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies

**Outcome #15****1. Outcome Target**

Number of persons gaining knowledge of marketing trends

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :60**2010** : 60**2011** : 60**2012** :60**2013** : 60**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 503 - Quality Maintenance in Storing and Marketing Food Products

**Outcome #16****1. Outcome Target**

Number of persons gaining knowledge of food packaging applications

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :150**2010** : 150**2011** : 150**2012** :150**2013** : 150**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Competing Public priorities
- Other (State & National Priorities)
- Appropriations changes
- Competing Programatic Challenges
- Economy
- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Government Regulations
- Natural Disasters (drought,weather extremes,etc.)

#### **Description**

Other: Emerging pests and pest control

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Comparison between locales where the program operates and sites without program intervention
- Before-After (before and after program)
- After Only (post program)
- During (during program)

#### **Description**

{NO DATA ENTERED}

### **2. Data Collection Methods**

- Sampling
- On-Site
- Mail

#### **Description**

{NO DATA ENTERED}

**V(A). Planned Program (Summary)****Program #5****1. Name of the Planned Program**

Family Well-Being

**2. Brief summary about Planned Program**

Family well being is a high priority for Indiana . A variety of programs and delivery methods will be offered to strengthen families and help them learn and use positive, personal development and relationship skills as well as teach parents to know and use positive parenting practices. Programs will help individuals increase their knowledge of effective financial management and improve their financial stability.

**3. Program existence :** Mature (More than five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	26%		26%	
802	Human Development and Family Well-Being	74%		74%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Families are at the very heart of the strength and competitiveness of our state and nation. Difficult situations such as poverty, stress, lack of knowledge or positive parenting role models impede healthy family functioning. Changes in economic conditions, technological advances, evolving demographics, fluctuating employment patterns, and modifications of government policies alter the decision-making environment for families. These changes have contributed to individual and family stress and increased the difficulty of decision making.

There are 779,070 families in Indiana. There are a number of statistics that illustrate the situations that cause stress in Indiana families. Studies show that child abuse deaths in Indiana are twice the national rate. Over 40% of U.S. families live off of 110% of their incomes. Twenty-three percent of Americans do not save anything at all on a monthly basis for long term goals such as retirement or a child's education. In 2001, 12.1% of children ages 0-17 in Indiana lived in poverty. Thirty-four percent of public school students in Indiana receive free or reduced-cost lunch. Between 2000 and 2040, the population 65 or older in Indiana will nearly double, from about 753,000 to nearly 1.5 million.

Indiana county-based needs assessments strongly indicated these areas of need:

In the area of financial management:

- ability to meet short-term financial needs;
- ability to achieve long-term financial goals;
- ability to protect selves and others from scams and frauds



In the area of human development:

- developing basic parenting skills
- supporting grandparents raising grandchildren
- building positive communication skills
- supporting aging and development in later life
- facilitating personal development including life skills, self-esteem, and conflict management

County and statewide programming assessments suggest that researchers need to communicate empirical findings and implications effectively, as some areas are prone to invasion by pop psychology approaches. Researchers and Extension Educators need to collaborate and communicate so effective methods of information dissemination and programming can be implemented.

## **2. Scope of the Program**

- In-State Research
- Multistate Research
- Integrated Research and Extension
- Multistate Integrated Research and Extension
- In-State Extension
- Multistate Extension

## **V(D). Planned Program (Assumptions and Goals)**

### **1. Assumptions made for the Program**

Research-based education can increase knowledge, build skills, and change behavior. Public policies can encourage families' asset-building.

Individuals and families can gain the knowledge and skills needed to enhance quality of life. The knowledge and skills needed to enhance quality of life are not innate, they must be learned. What impacts one family member impacts all members of the family system. The social and financial costs of not having healthy individuals and families are a major societal burden that can be prevented.

We would expect funding opportunities to increase or remain constant during the five year period. Partnering with other stakeholders will also be a key to increase positive impact.

### **2. Ultimate goal(s) of this Program**

- Strengthen the capacity of individuals and families to establish and maintain economic security and a quality emotional environment throughout their lives
- Maximize the psychological, social, physical, financial, and emotional well-being of Indiana residents
- These goals will be accomplished through non-formal educational opportunities that increase knowledge, influence attitudes, teach skills, inspire aspirations, and promote behavior changes

## **V(E). Planned Program (Inputs)**

### **1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	4.0	0.0	4.0	0.0
2010	4.0	0.0	4.0	0.0
2011	4.0	0.0	4.0	0.0
2012	4.0	0.0	4.0	0.0
2013	4.0	0.0	4.0	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

- Conduct workshops
- Provide training
- Develop web-based and distance educational materials
- Work with the media
- Conduct research
- Create displays
- Collaborate with other agencies

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● One-on-One Intervention</li> <li>● Education Class</li> <li>● Group Discussion</li> <li>● Demonstrations</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (Distance Education)</li> <li>● Public Service Announcement</li> <li>● Web sites</li> <li>● Newsletters</li> <li>● TV Media Programs</li> </ul>

**3. Description of targeted audience**

- immigrants
- welfare-to-work individuals
- job loss individuals
- youth
- adults
- limited resource families
- farm families
- families in divorce
- child care professionals
- trainers of child care professionals
- policy makers
- parents
- volunteers that work with parents
- elder caregivers
- adult children
- retirement associations
- community leaders

•planners

## V(G). Planned Program (Outputs)

### 1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	40250	160500	19750	73250
2010	49500	160750	20000	74000
2011	49750	161000	20250	74500
2012	50000	161250	20500	74750
2013	50000	161250	20500	74750

### 2. (Standard Research Target) Number of Patent Applications Submitted

Expected Patent Applications

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

### 3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	0	2	0
2010	0	2	0
2011	0	2	0
2012	0	2	0
2013	0	2	0

## V(H). State Defined Outputs

### 1. Output Target

- Number of staff development opportunities for Extension Educators

2009 :8                      2010 :8                      2011 :8                      2012 :8                      2013 :8

- Number of programs offered to parents, childcare providers, youth, adults, low-wealth households and consumers

2009 :200                      2010 :200                      2011 :200                      2012 :200                      2013 :200

- Number of research projects

2009 :3                      2010 :3                      2011 :5                      2012 :7                      2013 :9

- Number of publications

2009 :2                      2010 :2                      2011 :2                      2012 :2                      2013 :2

- Number of web sites developed

2009 :0	2010 :1	2011 :2	2012 :2	2013 :2
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- Number of new partnerships, coalitions, advisory boards created.

2009 :5	2010 :10	2011 :15	2012 :20	2013 :25
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**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of participants who increased their knowledge of debt management
2	Number of participants who adopted one or more practices to reduce debt
3	Number of participants reporting decreased debt
4	Number of participants who increased their knowledge of the benefits of saving on a regular basis
5	Number of participants who increased the amount of money they save regularly
6	Number of participants who save regularly as a result of educational programming
7	Number of participants who increased their knowledge of basic personal financial management
8	Number of participants who have established financial goals to guide financial decisions
9	Number of participants who develop a plan for achieving financial security
10	Number of participants who report increased financial security
11	Number of participants who increased their knowledge of child care and how to manage care giving roles and responsibilities
12	Number of participants who increased their knowledge of decision making skills necessary to make quality of life decisions for caregivers and receivers
13	Number of child care professionals who are working toward, who have obtained, or who have renewed the Child Development Associate Credential.
14	Number of participants who increased their knowledge of basic parenting skills
15	Number of participants reporting improved parent-child communication
16	Number of participants reporting significant improvement in satisfaction and quality of parent-child relationships
17	Number of participants who report they will take one or more recommended actions to avoid identity theft
18	Number of participants who developed knowledge of safety and security procedures in an emergency
19	Number of individuals who increased their knowledge about establishing and maintaining health indoor air quality
20	Number of adults who have experienced changed attitudes or behaviors in valuing and appreciating differences in others
21	Number of adults who have increased their understanding of human relationships, communications, and leadership styles.
22	Number of adults who have increased their understanding of themselves and others
23	Participants increased saving by \$_____
24	Participants reduced debt by \$_____
25	Number of participants who report knowing the steps to take if they are a victim of identity theft

**Outcome #1****1. Outcome Target**

Number of participants who increased their knowledge of debt management

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #2****1. Outcome Target**

Number of participants who adopted one or more practices to reduce debt

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #3****1. Outcome Target**

Number of participants reporting decreased debt

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**100**2010 :** 125**2011 :** 150**2012 :**175**2013 :** 175**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #4****1. Outcome Target**

Number of participants who increased their knowledge of the benefits of saving on a regular basis

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #5****1. Outcome Target**

Number of participants who increased the amount of money they save regularly

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #6****1. Outcome Target**

Number of participants who save regularly as a result of educational programming

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :350                      2010 : 400                      2011 : 450                      2012 :500                      2013 : 550

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #7****1. Outcome Target**

Number of participants who increased their knowledge of basic personal financial management

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #8****1. Outcome Target**

Number of participants who have established financial goals to guide financial decisions

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #9****1. Outcome Target**

Number of participants who develop a plan for achieving financial security

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #10****1. Outcome Target**

Number of participants who report increased financial security

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :350                      2010 : 400                      2011 : 450                      2012 :500                      2013 : 550

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #11****1. Outcome Target**

Number of participants who increased their knowledge of child care and how to manage care giving roles and responsibilities

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :500                      2010 : 500                      2011 : 700                      2012 :900                      2013 : 1100

**3. Associated Institute Type(s)**

•1862 Extension

•1862 Research

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #12****1. Outcome Target**

Number of participants who increased their knowledge of decision making skills necessary to make quality of life decisions for caregivers and receivers

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :200                      2010 : 300                      2011 : 400                      2012 :500                      2013 : 600

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being



**Outcome #13****1. Outcome Target**

Number of child care professionals who are working toward, who have obtained, or who have renewed the Child Development Associate Credential.

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**20**2010 :** 20**2011 :** 30**2012 :**40**2013 :** 50**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #14****1. Outcome Target**

Number of participants who increased their knowledge of basic parenting skills

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**500**2010 :** 700**2011 :** 900**2012 :**1100**2013 :** 1100**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #15****1. Outcome Target**

Number of participants reporting improved parent-child communication

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**500**2010 :** 500**2011 :** 700**2012 :**900**2013 :** 1100**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #16****1. Outcome Target**

Number of participants reporting significant improvement in satisfaction and quality of parent-child relationships

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**500**2010 :** 500**2011 :** 700**2012 :**900**2013 :** 1100**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #17****1. Outcome Target**

Number of participants who report they will take one or more recommended actions to avoid identity theft

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #18****1. Outcome Target**

Number of participants who developed knowledge of safety and security procedures in an emergency

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #19****1. Outcome Target**

Number of individuals who increased their knowledge about establishing and maintaining health indoor air quality

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #20****1. Outcome Target**

Number of adults who have experienced changed attitudes or behaviors in valuing and appreciating differences in others

**2. Outcome Type :** Change in Action Outcome Measure

2009 :100                      2010 : 150                      2011 : 250                      2012 :350                      2013 : 450

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #21****1. Outcome Target**

Number of adults who have increased their understanding of human relationships, communications, and leadership styles.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :150                      2010 : 150                      2011 : 250                      2012 :350                      2013 : 450

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #22****1. Outcome Target**

Number of adults who have increased their understanding of themselves and others

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :150                      2010 : 150                      2011 : 250                      2012 :350                      2013 : 450

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #23****1. Outcome Target**

Participants increased saving by \$\_\_\_\_\_

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**Outcome #24****1. Outcome Target**

Participants reduced debt by \$\_\_\_\_\_

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

## **Outcome #25**

### **1. Outcome Target**

Number of participants who report knowing the steps to take if they are a victim of identity theft

### **2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

### **3. Associated Institute Type(s)**

- 1862 Extension

### **4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Competing Public priorities
- Natural Disasters (drought,weather extremes,etc.)
- Appropriations changes
- Public Policy changes
- Economy
- Competing Programatic Challenges
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)

#### **Description**

{NO DATA ENTERED}

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- After Only (post program)
- Before-After (before and after program)

#### **Description**

{NO DATA ENTERED}

### **2. Data Collection Methods**

- Other (Evaluations)
- Mail
- On-Site
- Sampling
- Journals
- Observation
- Telephone

#### **Description**

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #6

1. Name of the Planned Program

Human Nutrition, Food Safety and Human Health and Well-Being

2. Brief summary about Planned Program

Our integrated program for food safety, human health, and nutrition includes a wide variety of disciplines in the college of agriculture, the veterinary school, and the college of consumer and family sciences. Purdue food safety programs focus efforts toward rapid detection of foodborne pathogens, grain processing and control of molds and mycotoxins, non-thermal and thermal food processing treatments to reduce/eliminate pathogens and spoilage organisms, pest control and integrated pest management programs, the impact of human intestinal microflora and human disease, and food safety educational programs for farmers, retailers, and consumers. Examples of food safety integrated multi-disciplinary centers and efforts include the Center for Food Safety Engineering, the Center for Urban and Industrial Pest Management, and the Extension Disaster Education Network. Purdue human nutrition and human health programs focus on the impact of dietary intake and exercise on human health, use and beneficial effects of phytochemicals, cereal processing and nutrition, calcium and bone metabolism, impact of dietary intake and bone health, and nutritional educational programs for the food industry, healthcare, industry professionals, and consumers. Examples of human health and nutrition related research and extension integrated efforts include the Agriculture and Rural Safety and Health Program, Dietary Calcium and Human Health program, and Healthy Well Nourished Hoosiers.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	1%		1%	
702	Requirements and Function of Nutrients and Other Food Component	30%		30%	
703	Nutrition Education and Behavior	11%		11%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residue	7%		7%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Pa	28%		28%	
721	Insects and Other Pests Affecting Humans	7%		7%	
723	Hazards to Human Health and Safety	16%		16%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

In the United State alone, over 76 million cases of foodborne illness are reported each year, leading to over 5,000 deaths and 325,000 hospitalizations, costing Americans billions of dollars. Of most concern are inherent foodborne pathogens such as Norwalk virus, Campylobacter, Salmonella, E. coli, and Listeria. Since 9/11/2001, a major emphasis for the food industry and regulatory agencies is the threat of intentionally contaminated food systems. Research efforts need to focus on detection and control, and educational efforts should translate this information to optimize food handling practices. Our food systems are also exposed to a wide variety of quality degrading challenges from production agriculture practices (i.e. pest control), through transportation systems (i.e. temperature control), at processing (i.e. sanitation), in retail food establishments and at consumer homes (i.e. food handler contamination). Providing best practices and implementing effective educational programs leads to a higher quality and more profitable food system. As consumer lifespan increases, resulting in a more immuno-compromised population, the emphasis on human health heightens. Researchers need to understand and communicate the effects of food consumption and the impact of beneficial ingredients to improve human health. One area of specific interest is an understanding of the health benefits and potential uses of nutraceuticals and functional foods. Other areas under study, relative to nutrition, include factors that affect onset of diabetes and obesity in humans

#### 2. Scope of the Program

- Multistate Research
- Integrated Research and Extension
- Multistate Extension
- In-State Extension
- In-State Research
- Multistate Integrated Research and Extension

**V(D). Planned Program (Assumptions and Goals)****1. Assumptions made for the Program**

A tremendous amount of food safety, food defense, and human nutrition research and outreach programs have been identified nationwide for the next five years. We would expect funding opportunities to increase or remain constant during the five year period. To be more effective and more competitive, we recognize the need to further integrate research and extension efforts and to build multidisciplinary teams. Partnering with industry, regulatory agencies, and other stakeholders will also be a key strategic movement to increase our impact.

**2. Ultimate goal(s) of this Program**

The goal of this overall program is integrate our research, outreach, and educational efforts to enhance the safety and quality of the food supply and to improve human health through development of more nutritious and healthy foodstuffs.

**V(E). Planned Program (Inputs)****1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	15.5	0.0	53.5	0.0
2010	15.5	0.0	53.5	0.0
2011	15.5	0.0	53.5	0.0
2012	15.5	0.0	53.5	0.0
2013	15.5	0.0	53.5	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

Research-based programs will focus on conducting research experiments and programs emphasizing our key interest areas including

- detection and control of foodborne pathogens,
- effects of diet and nutrition on human health,
- beneficial effects of nutrition, functional foods and biomedical research, and
- nutritional impact on chronic diseases including diabetes, heart disease, and obesity

A wide variety of programs will be delivered to our targeted audiences. Some programs will include a complete development of curriculum, while others will involve the use of readily available programs used in other states and/or available for purchase through different organizations. Our output effort will include:

- partnering with important stakeholders
- development of workshop materials and curricula
- conducting workshops
- development of web-based and distance education materials
- working with the media

We expect to increase our offerings through distance education and/or web-based materials. Most programs involve some type of collaboration or partnerships with our stakeholders, with industry, with consumers, or with regulatory agencies. Evaluation tools vary greatly depending on the intended audience and program type ranging from surveys, to pre-and post test, to national certification exams, and intensive follow up surveys to better assess knowledge gain.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Other 1 (Hands-on training)</li> <li>● Demonstrations</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (Distance Education programs)</li> <li>● Public Service Announcement</li> <li>● Other 2 (Extension publications)</li> <li>● TV Media Programs</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

There are a wide variety of intended audiences including:

- Animal production personnel
- Plant production personnel
- Food manufacturing and processing plant personnel
- The transportation industry
- Foodservice and food retail workers
- Consumers
- Healthcare
- Day care
- Nursing homes
- Youth
- State and county health departments
- Federal regulatory officials
- State industry associations
- First Responders

**V(G). Planned Program (Outputs)****1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	3000	20000	300	2000
2010	3000	20000	300	2000
2011	3000	20000	300	2000
2012	3000	20000	300	2000
2013	10000	30000	1000	25000

**2. (Standard Research Target) Number of Patent Applications Submitted****Expected Patent Applications**

2009 :2

2010 :2

2011 :2

2012 :2

2013 :2

**3. Expected Peer Review Publications**



Year	Research Target	Extension Target	Total
2009	15	0	0
2010	15	0	0
2011	15	0	0
2012	15	0	0
2013	15	0	0

**V(H). State Defined Outputs****1. Output Target**

- Number of nutrition related programs offered to consumers

**2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100**

- Number of programs offered to the food industry

**2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100**

- Number of research programs on food safety, human nutrition, and health

**2009 :10                      2010 :10                      2011 : 10                      2012 :10                      2013 :10**

- Number of nutrition related research publications

**2009 :4                      2010 :4                      2011 : 4                      2012 :4                      2013 :5**

- Number of research publications related to detection of foodborne pathogens

**2009 :5                      2010 :5                      2011 : 5                      2012 :5                      2013 :5**

- Number of research publications related to control of foodborne hazards

**2009 :4                      2010 :4                      2011 : 4                      2012 :4                      2013 :4**

- Number of research publications related to food defense and protection

**2009 :2                      2010 :2                      2011 : 2                      2012 :2                      2013 :2**

- Number of nutrition programs offered to foodservice staff

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of community health coalition events

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of newsletters, brochures, or publications distributed to consumers

**2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100**

- Number of food safety programs offered to consumers

2009 :50                      2010 :50                      2011 :50                      2012 :50                      2013 :50

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of persons who increased their knowledge of proper hand washing
2	Number of persons who increased their knowledge of cooking foods adequately
3	Number of persons who increased their knowledge of avoiding cross-contamination
4	Number of persons who increased their knowledge of keeping food at a safe temperature
5	Number of persons who increased their knowledge of storing foods properly
6	Number of participants passing food handler certificate
7	Number of incidents of food borne illness associated with unsafe food handling practices
8	Number of persons who increased their knowledge of the connection between food choices and risk of chronic disease.
9	Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories
10	Number of persons who increased knowledge of USDA serving sizes
11	Number of participants consuming appropriate USDA serving sizes
12	Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories
13	Number of participants with decreased risk factors for chronic disease (including diabetes, heart disease, obesity)
14	Number of participants with decreased chronic disease complications (including diabetes, heart disease, obesity)
15	Number of persons who increase knowledge of the relationship between nutrition and health
16	Number of persons who increased their knowledge of physical activity recommendations
17	Number of persons who adopt one or more practices to improve food choices and activity levels
18	Number of participants that report reduced medical costs because of changes in food choices and activity levels
19	Number of parents who have increased their understanding of how to raise healthy eaters

**Outcome #1****1. Outcome Target**

Number of persons who increased their knowledge of proper hand washing

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

**Outcome #2****1. Outcome Target**

Number of persons who increased their knowledge of cooking foods adequately

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

**Outcome #3****1. Outcome Target**

Number of persons who increased their knowledge of avoiding cross-contamination

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

**Outcome #4****1. Outcome Target**

Number of persons who increased their knowledge of keeping food at a safe temperature

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

**Outcome #5****1. Outcome Target**

Number of persons who increased their knowledge of storing foods properly

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :100

2010 : 100

2011 : 100

2012 :100

2013 : 100

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins
- 721 - Insects and Other Pests Affecting Humans

**Outcome #6****1. Outcome Target**

Number of participants passing food handler certificate

**2. Outcome Type :** Change in Action Outcome Measure

2009 :100

2010 : 100

2011 : 100

2012 :100

2013 : 100

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

**Outcome #7****1. Outcome Target**

Number of incidents of food borne illness associated with unsafe food handling practices

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :5

2010 : 5

2011 : 5

2012 :5

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

**Outcome #8****1. Outcome Target**

Number of persons who increased their knowledge of the connection between food choices and risk of chronic disease.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :500

2010 : 500

2011 : 500

2012 :500

2013 : 500

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components

**Outcome #9****1. Outcome Target**

Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009 :**500                      **2010 :** 500                      **2011 :** 500                      **2012 :**500                      **2013 :** 500

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components

**Outcome #10****1. Outcome Target**

Number of persons who increased knowledge of USDA serving sizes

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009 :**1000                      **2010 :** 1000                      **2011 :** 1000                      **2012 :**1000                      **2013 :** 1000

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #11****1. Outcome Target**

Number of participants consuming appropriate USDA serving sizes

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**500                      **2010 :** 500                      **2011 :** 500                      **2012 :**500                      **2013 :** 500

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #12****1. Outcome Target**

Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**1000                      **2010 :** 1000                      **2011 :** 1000                      **2012 :**1000                      **2013 :** 1000

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components

**Outcome #13****1. Outcome Target**

Number of participants with decreased risk factors for chronic disease (including diabetes, heart disease, obesity)

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :100

2010 : 100

2011 : 100

2012 :100

2013 : 100

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components

**Outcome #14****1. Outcome Target**

Number of participants with decreased chronic disease complications (including diabetes, heart disease, obesity)

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :100

2010 : 100

2011 : 100

2012 :100

2013 : 100

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components

**Outcome #15****1. Outcome Target**

Number of persons who increase knowledge of the relationship between nutrition and health

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :1000

2010 : 1000

2011 : 1000

2012 :1000

2013 : 1000

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components

**Outcome #16****1. Outcome Target**

Number of persons who increased their knowledge of physical activity recommendations

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :1000

2010 : 1000

2011 : 1000

2012 :1000

2013 : 1000

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #17****1. Outcome Target**

Number of persons who adopt one or more practices to improve food choices and activity levels

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :1000                      **2010** : 1000                      **2011** : 1000                      **2012** :1000                      **2013** : 1000

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #18****1. Outcome Target**

Number of participants that report reduced medical costs because of changes in food choices and activity levels

**2. Outcome Type :** Change in Condition Outcome Measure

**2009** :100                      **2010** : 100                      **2011** : 100                      **2012** :100                      **2013** : 100

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #19****1. Outcome Target**

Number of parents who have increased their understanding of how to raise healthy eaters

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :0                      **2010** : 0                      **2011** : 0                      **2012** :0                      **2013** : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Other (State and National priorities)
- Appropriations changes
- Competing Public priorities
- Public Policy changes
- Competing Programatic Challenges
- Economy
- Natural Disasters (drought,weather extremes,etc.)



**Description**

Other: State and National priorities

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Other (Success/pass rate on regulatory)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- After Only (post program)

**Description**

Other: Success and pass rate on passing regulatory certification exams

**2. Data Collection Methods**

- Sampling
- On-Site
- Mail

**Description**

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #7

1. Name of the Planned Program

Natural Resources and Environment

2. Brief summary about Planned Program

The integrated research and extension programs in Natural Resources and Environment include faculty and staff from 8 departments within the College of Agriculture. One of the primary segments of the program involves increasing knowledge of the relationship between soils, nutrients, and plants. Another goal is increasing and improving the productivity and sustainability of forest resources, particularly hardwoods. Programs will teach landowners and land managers to evaluate the condition of lands and undertake management and restoration activities that increase their quality of life while providing natural resources benefits for society. A number of activities are aimed at preventing or mitigating pollution of natural resources, whether from natural causes or as a result of human activity. The mission of the Animal Manure Management Common Interest Group is to provide current scientifically sound information and technologies that are economically sound, feasible for implementation and promote environmental stewardship to livestock and poultry producers, technical service providers and consultants, government officials and the general public. The Water Quality Common Interest Group will address non-point sources of water pollution and loss of riparian habitat by working with land owners and managers to participate in collaborative watershed planning and adoption of sustainable land use practices. Urban and suburban environments that will result in sustainable land use, enhancement of natural components, and increased quality of life for residents will be targeted.

3. Program existence :     Mature (More then five years)

4. Program duration :     Long-Term (More than five years)

5. Expending formula funds or state-matching funds :             Yes

6. Expending other than formula funds or state-matching funds :             Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	1%		1%	
102	Soil, Plant, Water, Nutrient Relationships	18%		18%	
104	Protect Soil from Harmful Effects of Natural Elements	5%		5%	
111	Conservation and Efficient Use of Water	2%		2%	
112	Watershed Protection and Management	6%		6%	
121	Management of Range Resources	1%		1%	
123	Management and Sustainability of Forest Resources	18%		18%	
125	Agroforestry	1%		1%	
131	Alternative Uses of Land	10%		10%	
132	Weather and Climate	4%		4%	
133	Pollution Prevention and Mitigation	24%		24%	
135	Aquatic and Terrestrial Wildlife	10%		10%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

Indiana residents want to live in aesthetically pleasing urban and rural environments, with ready access to well managed forests and wildlands. They want air and water resources that are free from pollution. At the same time, the production of crops and livestock and harvesting of timber, especially hardwoods, are important contributors to the economy of the state. Research is necessary to generate the knowledge that will allow these agricultural enterprises to flourish while providing Indiana residents with the quality of environment that they desire. Extension programs will provide assistance to farmers, ranchers, land owners, and land

managers that will enable them to maintain their enterprises in a profitable, yet environmentally sustainable manner.

## 2. Scope of the Program

- Multistate Extension
- In-State Research
- Multistate Integrated Research and Extension
- Multistate Research
- In-State Extension
- Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

The increasing urban/rural interface will require that farmers, ranchers, and land owners learn to coexist with urban and rural residents. Research and Extension programs will provide producers with the knowledge and skills they need to maintain their enterprises in an economically viable manner, while minimizing negative impacts on the environment and their neighbors. Extension programs can also successfully teach urban and rural residents about the importance of agricultural production to the economy of the state and encourage dialogue between these two groups.

### 2. Ultimate goal(s) of this Program

- Watershed stakeholders will collaborate effectively to develop and implement plans to protect and restore water resources.
- Owners of forestlands and wildlands and their professional advisors will have the skills necessary to meet the objectives of the owners in a sustainable and ecologically sound manner.
- To equip the livestock and poultry producers with the knowledge and current information to comply with regulations, make wise decisions for manure management systems design, and management and implementation of new scientifically and economically sound technologies for operation.
- To inform crop and livestock producers in the value of optimal use of manure nutrients as fertilizer in crop production.
- The urban and suburban communities of Indiana will provide their residents with aesthetically pleasing environments in which to live and work.

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	12.0	0.0	32.0	0.0
2010	12.0	0.0	32.0	0.0
2011	12.0	0.0	32.0	0.0
2012	12.0	0.0	32.0	0.0
2013	12.0	0.0	32.0	0.0

## V(F). Planned Program (Activity)

### 1. Activity for the Program

- Workshops
- Extension publications
- Public service announcements
- Research
- Web site development

- Home and farm visits
- Displays
- IP video programs
- Demonstrations and field days
- One-on-one consultations
- Collaboration with sister agencies

## 2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>• Workshop</li> <li>• Education Class</li> <li>• Demonstrations</li> <li>• One-on-One Intervention</li> <li>• Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Web sites</li> <li>• Public Service Announcement</li> <li>• Other 1 (Extension publications)</li> <li>• Newsletters</li> </ul>

## 3. Description of targeted audience

- Agricultural producers
- Rural and urban residents
- Elected officials and other decision-makers
- Owners of private and public forestlands and wildlands
- Natural resource professionals
- Technical service providers
- Tree care providers
- Right of way managers
- Urban planners
- Youth

## V(G). Planned Program (Outputs)

### 1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	23000	125000	6000	35000
2010	23000	125000	6000	35000
2011	23000	125000	6000	35000
2012	23000	125000	6000	35000
2013	23000	125000	6000	35000

### 2. (Standard Research Target) Number of Patent Applications Submitted

#### Expected Patent Applications

2009 :2                      2010 :2                      2011 :2                      2012 :2                      2013 :2

### 3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	75	25	0
2010	75	25	0
2011	75	25	0
2012	75	25	0
2013	75	25	0

**V(H). State Defined Outputs****1. Output Target**

- Number of programs offered to producers, land owners, and land managers.

**2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100**

- Number of research projects

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of demonstrations and field days

**2009 :10                      2010 :10                      2011 : 10                      2012 :10                      2013 :10**

- Number of Extension publications written, new & revised

**2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100**

- Number of publications, media interactions, and presentations related to Indiana and regional weather and climate

**2009 :20                      2010 :20                      2011 : 20                      2012 :20                      2013 :20**

- Number of K-12 Classroom visits

**2009 :20                      2010 :20                      2011 : 20                      2012 :20                      2013 :20**

- Number of one-on-one consultations

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of newsletter or magazine articles written

**2009 :5                      2010 :5                      2011 : 5                      2012 :5                      2013 :5**

- Number of volunteers trained

**2009 :40                      2010 :40                      2011 : 40                      2012 :40                      2013 :40**

- Number of Plan Commission meetings

**2009 :30                      2010 :30                      2011 : 30                      2012 :30                      2013 :30**

- Number of Extension publications distributed

2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of participants who increase knowledge of practices to protect water resources
2	Number of participants who improve decision making for use of water resources
3	Number of participants who increase knowledge of proper application of fertilizer, manure and waste products to soil and potential for environmental consequences of misapplication
4	Number of participants who increased adoption of proper application of fertilizer, manure and waste products to soil
5	Number of participants who increase knowledge of best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands
6	Number of participants who adopt best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands
7	Number of participants who increase knowledge of the value of ponds in landscapes and methods for installing and managing ponds
8	Number of participants who increase value of landscapes through better installation and management of ponds
9	Number of participants who increase knowledge of on-site wastewater treatment siting and maintenance needs
10	Number of participants who make more informed decisions for on-site wastewater treatment siting and maintenance
11	Number of water quality violations related to animal production and land application in the state of Indiana
12	Number of tree care providers in Indiana who become certified arborists.
13	Number of professional natural resource advisors who have the skills necessary to assess the health of the wildlands
14	Number of wildlands owners who have a relationship with knowledgeable professional natural resource advisors and have developed and implemented a management plan
15	Number of natural resource professionals and wildland owners who have worked with landowners to develop and implement management plans
16	Number of owners of wildlands who will have assessed the health of their lands and developed and implemented management plans
17	Number of observers participating in weather and climate monitoring efforts
18	Number of certified arborists maintaining their certification
19	Number of landowners with knowledge of proper tree planting and management techniques
20	Number of participants who increased their knowledge of natural resource management
21	Number of participants who increased their knowledge of proper application of pesticides
22	Number of participants who increased their knowledge of topsoil importance
23	Number of participants who increased their knowledge of Indiana's diverse wildlife
24	Number of woodlot owners who improved their management skills



**Outcome #1****1. Outcome Target**

Number of participants who increase knowledge of practices to protect water resources

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #2****1. Outcome Target**

Number of participants who improve decision making for use of water resources

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #3****1. Outcome Target**

Number of participants who increase knowledge of proper application of fertilizer, manure and waste products to soil and potential for environmental consequences of misapplication

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #4****1. Outcome Target**

Number of participants who increased adoption of proper application of fertilizer, manure and waste products to soil

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #5****1. Outcome Target**

Number of participants who increase knowledge of best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #6****1. Outcome Target**

Number of participants who adopt best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #7****1. Outcome Target**

Number of participants who increase knowledge of the value of ponds in landscapes and methods for installing and managing ponds

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife

**Outcome #8****1. Outcome Target**

Number of participants who increase value of landscapes through better installation and management of ponds

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife

**Outcome #9****1. Outcome Target**

Number of participants who increase knowledge of on-site wastewater treatment siting and maintenance needs

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation

**Outcome #10****1. Outcome Target**

Number of participants who make more informed decisions for on-site wastewater treatment siting and maintenance

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 112 - Watershed Protection and Management
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation

**Outcome #11****1. Outcome Target**

Number of water quality violations related to animal production and land application in the state of Indiana

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :10                      2010 : 5                      2011 : 5                      2012 :5                      2013 : 2

**3. Associated Institute Type(s)**

•1862 Extension  
•1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

**Outcome #12****1. Outcome Target**

Number of tree care providers in Indiana who become certified arborists.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :15                      2010 : 15                      2011 : 15                      2012 :15                      2013 : 15

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources
- 125 - Agroforestry

**Outcome #13****1. Outcome Target**

Number of professional natural resource advisors who have the skills necessary to assess the health of the wildlands

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife

**Outcome #14****1. Outcome Target**

Number of wildlands owners who have a relationship with knowledgeable professional natural resource advisors and have developed and implemented a management plan

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife

**Outcome #15****1. Outcome Target**

Number of natural resource professionals and wildland owners who have worked with landowners to develop and implement management plans

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife

**Outcome #16****1. Outcome Target**

Number of owners of wildlands who will have assessed the health of their lands and developed and implemented management plans

**2. Outcome Type :** Change in Condition Outcome Measure**2009 :**20**2010 :** 24**2011 :** 30**2012 :**33**2013 :** 35**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife

**Outcome #17****1. Outcome Target**

Number of observers participating in weather and climate monitoring efforts

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**20**2010 :** 20**2011 :** 20**2012 :**20**2013 :** 20**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 132 - Weather and Climate

**Outcome #18****1. Outcome Target**

Number of certified arborists maintaining their certification

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**50**2010 :** 50**2011 :** 50**2012 :**50**2013 :** 50**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources
- 125 - Agroforestry

**Outcome #19****1. Outcome Target**

Number of landowners with knowledge of proper tree planting and management techniques

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources

- 125 - Agroforestry

**Outcome #20****1. Outcome Target**

Number of participants who increased their knowledge of natural resource management

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**10**2010 :** 10**2011 :** 10**2012 :**10**2013 :** 10**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources

**Outcome #21****1. Outcome Target**

Number of participants who increased their knowledge of proper application of pesticides

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 133 - Pollution Prevention and Mitigation

**Outcome #22****1. Outcome Target**

Number of participants who increased their knowledge of topsoil importance

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships

**Outcome #23****1. Outcome Target**

Number of participants who increased their knowledge of Indiana's diverse wildlife

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**100**2010 :** 100**2011 :** 100**2012 :**100**2013 :** 100**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 135 - Aquatic and Terrestrial Wildlife

**Outcome #24****1. Outcome Target**

Number of woodlot owners who improved their management skills

**2. Outcome Type :** Change in Action Outcome Measure**2009 :**20**2010 :** 20**2011 :** 20**2012 :**20**2013 :** 20**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources
- 125 - Agroforestry

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Appropriations changes
- Competing Public priorities
- Public Policy changes
- Natural Disasters (drought,weather extremes,etc.)
- Competing Programatic Challenges
- Economy
- Government Regulations

**Description**

{NO DATA ENTERED}

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- Comparisons between program participants (individuals,group,organizations) and non-participants
- Retrospective (post program)
- Case Study
- After Only (post program)
- Time series (multiple points before and after program)
- Before-After (before and after program)

**Description**

{NO DATA ENTERED}



2. Data Collection Methods

- Mail
- Case Study
- Sampling
- Telephone
- On-Site
- Observation

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #8

1. Name of the Planned Program

Plants and Their Systems

2. Brief summary about Planned Program

Research and Extension programs will be conducted to discover and disseminate knowledge that will help row crop producers (primarily corn and soybean, along with wheat and forages) and horticultural crop growers (fruit, vegetables, and ornamental plants) produce their crops more efficiently, with less adverse effects on the environment, and in a way that strengthens rural economies. One of the fastest growing areas is the turfgrass industry, with a proliferation of golf courses, athletic fields, and landscapes requiring maintenance. Research and Extension programming will support these professionals. The Small Farms and Sustainable Agriculture Team will assist entrepreneurs in establishing small or alternative agricultural enterprises, through professional development opportunities for educators and through direct programming for potential producers. The Consumer Horticulture Team will provide professional development opportunities for county Extension educators to assist them in answering the ever-increasing number of requests for information on home horticulture.

3. Program existence :     Mature (More than five years)

4. Program duration :     Long-Term (More than five years)

5. Expending formula funds or state-matching funds :             Yes

6. Expending other than formula funds or state-matching funds :             Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	12%		12%	
202	Plant Genetic Resources	3%		3%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	8%		8%	
204	Plant Product Quality and Utility (Preharvest)	1%		1%	
205	Plant Management Systems	15%		15%	
206	Basic Plant Biology	11%		11%	
211	Insects, Mites, and Other Arthropods Affecting Plants	14%		14%	
212	Pathogens and Nematodes Affecting Plants	14%		14%	
213	Weeds Affecting Plants	9%		9%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	1%		1%	
215	Biological Control of Pests Affecting Plants	3%		3%	
216	Integrated Pest Management Systems	9%		9%	
	<b>Total</b>	100%		100%	

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

Row crop producers are faced with significant challenges resulting from low commodity prices, higher fixed and variable input costs, and increasing governmental regulation. Other than ceasing production, the two viable options for row crop producers are to become more efficient or to switch to alternative enterprises. The Cropping Systems Common Interest Group provides programming to assist farmers to produce crops more efficiently and the Small Farms and Sustainable Agriculture Team assists producers in beginning new or alternative enterprises. Horticultural crop production continues to be a small, but significant part of

the rural economy. Horticultural producers also must look for greater efficiencies and new niche markets to exploit to remain viable. Turfgrass management is a rapidly expanding area that requires an increased research base and greater Extension programming to meet the demands of this important sector. Home horticulture is a very popular pastime for many homeowners, many of whom have limited experience with growing plants and require a good deal of assistance from county Extension educators.

## 2. Scope of the Program

- Integrated Research and Extension
- Multistate Integrated Research and Extension
- In-State Extension
- Multistate Research
- Multistate Extension
- In-State Research

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

Because of the large number of row crop producers, often the best strategy for reaching the maximum number of people is to train information providers such as Extension educators, Certified Crop Advisors, crop consultants, industry personnel, etc. This train-the-trainer model has worked well for many years and will continue to be the primary method for information dissemination. Turfgrass managers and horticultural crop producers are less numerous and are generally trained directly. Home horticulture questions are extremely numerous and are handled mostly through the county Extension offices.

### 2. Ultimate goal(s) of this Program

- To discover and deliver information that will help row crop producers address current issues as well as longer-term production efficiency parameters in crop, pest, nutrient, and related soil/water management areas in new and innovative ways.
- Horticultural enterprises will improve production techniques, pest control, crop selection, yield, and product quality while maintaining sustainability.
- Through applied research, more sustainable management programs and more efficient integrated pest management programs for turfgrass will be created.
- Increased knowledge of Indiana's citizens in proper landscape and garden management, including opportunities for volunteers and youth.
- Economically and socially strengthened rural communities by providing educational opportunities for establishment of small farms, alternative enterprises, and a more sustainable agriculture.

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	34.0	0.0	49.0	0.0
2010	34.0	0.0	49.0	0.0
2011	34.0	0.0	49.0	0.0
2012	34.0	0.0	49.0	0.0
2013	34.0	0.0	49.0	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

- Conduct meetings, conferences, and workshops
- Publish newsletters and Extension publications
- Establish web sites
- Field days
- Demonstration plots
- Telephone consultations
- Applied research
- Mass media
- Short courses

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Group Discussion</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Public Service Announcement</li> <li>● Web sites</li> <li>● TV Media Programs</li> <li>● Other 1 (Extension publications)</li> </ul>

**3. Description of targeted audience**

- Agricultural crop producers
- Crop consultants
- Agribusinesses
- Landowners
- Horticultural producers
- Professionals involved with golf courses, lawn care, sod production, athletic turf, and grounds
- Individuals and families interested in small farms or alternative enterprises
- Homeowners
- Youth

**V(G). Planned Program (Outputs)****1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	175000	400000	20000	500000
2010	175000	400000	20000	500000
2011	175000	400000	20000	500000
2012	175000	400000	20000	500000
2013	175000	400000	20000	50000

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications****2009 :1****2010 :1****2011 :1****2012 :1****2013 :1****3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	100	50	0
2010	100	50	0
2011	100	50	0
2012	100	50	0
2013	100	50	0

**V(H). State Defined Outputs****1. Output Target**

- Number of programs offered to producers, horticultural enterprises, Master Gardeners, etc.

**2009 :500****2010 :500****2011 :500****2012 :500****2013 :500**

- Number of research projects.

**2009 :50****2010 :50****2011 :50****2012 :50****2013 :50**

- Number of research publications.

**2009 :100****2010 :100****2011 :100****2012 :100****2013 :100**

- Number of volunteers trained to assist with information and programs.

**2009 :500****2010 :500****2011 :500****2012 :500****2013 :500**

- Number of Extension publications written, new or revised; web sites developed

**2009 :50****2010 :50****2011 :50****2012 :50****2013 :50**

- Number of Extension publications distributed

**2009 :100****2010 :100****2011 :100****2012 :100****2013 :100**

- Number of newsletter or magazine articles written

**2009 :10****2010 :10****2011 :10****2012 :10****2013 :10**

- Number of consultations

**2009 :50****2010 :50****2011 :50****2012 :50****2013 :50**

- Number of K-12 classroom visits

**2009 :10****2010 :10****2011 :10****2012 :10****2013 :10**

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of horticultural enterprises who increase knowledge of new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment
2	Number of horticultural enterprises who adopt new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment
3	Number of Indiana citizens who increase knowledge of proper landscape and garden management.
4	Number of volunteers who increase knowledge of consumer horticulture to serve as first detectors for symptoms of invasive species.
5	Number of professional turf managers who increase knowledge of pesticides, nutrients, and water inputs for maintaining high quality turf.
6	Number of professional turf managers who reduce pesticide, nutrient, and water inputs while maintaining high quality turf.
7	Number of high quality turf acres maintained with reduced pesticides, nutrient and water inputs.
8	Number of crop producers who increase knowledge of integrated pest management practices
9	Number of acres of field crops (corn, soybeans, forage, small grains) in which pests are managed using an integrated pest management system.
10	Number of crop producers who increase knowledge of best management practices in crop, nutrients, and related soil/water decisions.
11	Number of producers who adopt best management practices in crop, nutrient, and related soil/water decisions.

**Outcome #1****1. Outcome Target**

Number of horticultural enterprises who increase knowledge of new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :0****2010 : 0****2011 : 0****2012 :0****2013 : 0****3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

**Outcome #2****1. Outcome Target**

Number of horticultural enterprises who adopt new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment

**2. Outcome Type :** Change in Action Outcome Measure**2009 :30****2010 : 40****2011 : 50****2012 :60****2013 : 60****3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

**Outcome #3****1. Outcome Target**

Number of Indiana citizens who increase knowledge of proper landscape and garden management.



**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

**Outcome #4****1. Outcome Target**

Number of volunteers who increase knowledge of consumer horticulture to serve as first detectors for symptoms of invasive species.

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants

**Outcome #5****1. Outcome Target**

Number of professional turf managers who increase knowledge of pesticides, nutrients, and water inputs for maintaining high quality turf.

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009 :**0**2010 :** 0**2011 :** 0**2012 :**0**2013 :** 0**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

**Outcome #6****1. Outcome Target**

Number of professional turf managers who reduce pesticide, nutrient, and water inputs while maintaining high quality turf.

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**0                      **2010 :** 0                      **2011 :** 0                      **2012 :**0                      **2013 :** 0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants

**Outcome #7****1. Outcome Target**

Number of high quality turf acres maintained with reduced pesticides, nutrient and water inputs.

**2. Outcome Type :** Change in Condition Outcome Measure

**2009 :**100                      **2010 :** 100                      **2011 :** 100                      **2012 :**100                      **2013 :** 100

**3. Associated Institute Type(s)**

•1862 Extension  
•1862 Research

**4. Associated Knowledge Area(s)**

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

**Outcome #8****1. Outcome Target**

Number of crop producers who increase knowledge of integrated pest management practices

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 216 - Integrated Pest Management Systems

**Outcome #9****1. Outcome Target**

Number of acres of field crops (corn, soybeans, forage, small grains) in which pests are managed using an integrated pest management system.

**2. Outcome Type :** Change in Action Outcome Measure

2009 :3000000                      2010 : 3000000                      2011 : 3000000                      2012 :3000000                      2013 : 3000000

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 216 - Integrated Pest Management Systems

**Outcome #10****1. Outcome Target**

Number of crop producers who increase knowledge of best management practices in crop, nutrients, and related soil/water decisions.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**Outcome #11****1. Outcome Target**

Number of producers who adopt best management practices in crop, nutrient, and related soil/water decisions.

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**300

**2010 :** 400

**2011 :** 500

**2012 :**600

**2013 :** 600

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Appropriations changes
- Economy
- Public Policy changes
- Government Regulations
- Natural Disasters (drought,weather extremes,etc.)
- Competing Programatic Challenges
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

{NO DATA ENTERED}

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Time series (multiple points before and after program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention
- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- Structured
- Sampling
- Observation
- Case Study
- Mail
- Telephone
- On-Site

**Description**

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program #9

1. Name of the Planned Program

Animals and Their Systems

2. Brief summary about Planned Program

Research projects will be targeted at understanding the biology of poultry and livestock at the molecular, cellular, and systemic level, and improving the profitability of poultry and livestock production while minimizing environmental impacts on production and enhancing the health and well-being of animals. Specific efforts will span fundamental areas of growth and development, animal behavior and well-being, and sustainable and efficient production systems, using a multi-disciplinary approach. Research projects will also investigate the efficient use of by-products and co-products from ethanol and biofuels production facilities as feed for poultry and/or livestock. Extension activities will seek to improve producers' management skills to improve economic viability, enhance environmental stewardship, improve awareness among youth of the opportunities in poultry and livestock production, and to promote a positive image of poultry and livestock production in Indiana. These activities will be accomplished through publications, workshops, road-shows, and on-farm assistance. In addition, Extension programs will be presented for small livestock and poultry producers, in which often the producer has limited technical knowledge or experience or is attempting to use alternative production techniques.

3. Program existence :     Mature (More than five years)

4. Program duration :     Long-Term (More than five years)

5. Expending formula funds or state-matching funds :             Yes

6. Expending other than formula funds or state-matching funds :             Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	6%		6%	
302	Nutrient Utilization in Animals	30%		30%	
303	Genetic Improvement of Animals	7%		7%	
304	Animal Genome	13%		13%	
305	Animal Physiological Processes	3%		3%	
306	Environmental Stress in Animals	3%		3%	
307	Animal Management Systems	9%		9%	
308	Improved Animal Products (Before Harvest)	8%		8%	
311	Animal Diseases	10%		10%	
312	External Parasites and Pests of Animals	1%		1%	
313	Internal Parasites in Animals	1%		1%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occuring Toxins, and C	1%		1%	
315	Animal Welfare/Well-Being and Protection	8%		8%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Livestock and poultry production has been either stable or increasing in recent years in Indiana. The Indiana Department of

Agriculture has proposed to double pork production in Indiana, while poultry and dairy production also continue to grow. Continued expansion and growth of livestock and poultry facilities along with rising interest in naturally grown and organic production have broadened the spectrum of poultry and livestock production. The two primary challenges facing the industry are profitability and the effects of production on the environment (water and air). Modern poultry and livestock production requires keen management skills to maintain profitability in the face of shrinking margins per animal. Livestock and poultry producers require information to help them decide on appropriate technologies and management practices to control costs or increase revenues. Value added production and niche marketing will provide opportunities for some. The continued movement of urban dwellers to rural habitats has increased the need for improved environmental stewardship in animal production. Planning and zoning committees in local communities will require factual information to help them make decisions with regard to siting animal agriculture. Ongoing public scrutiny of animal husbandry practices requires development of management strategies to improve animal health and well-being and to assess the welfare of animals on farms.

## 2. Scope of the Program

- Multistate Integrated Research and Extension
- In-State Extension
- Multistate Research
- Multistate Extension
- In-State Research
- Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

Considerable research data are available to help improve efficiency of animal production systems, environmental stewardship in animal production facilities, and the health and well-being of poultry and livestock. However, continued changes in knowledge, environmental regulations, consumer demands, and public concerns about the products, methods, and effects of animal production will require a renewed focus on interdisciplinary research to address these issues. Likewise, Extension programs to carry the latest research information to traditional producers will continue to be important. Additionally, non-traditional producers, such as small land owners, organic producers, local planning and zoning committees, and others will become an increasingly important audience for Extension programs. These plans are contingent upon maintaining at least level funding from Federal and State agencies.

### 2. Ultimate goal(s) of this Program

- To improve management skills of poultry and livestock producers, leading to improved economic viability.
- To enhance environmental stewardship among Indiana's poultry and livestock producers.
- To increase the knowledge and awareness of opportunities in the poultry and livestock industry for Indiana's youth.
- To promote a positive image of poultry and livestock production in Indiana.
- To promote alternative agricultural enterprises related to poultry and livestock production.

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	20.0	0.0	50.0	0.0
2010	20.0	0.0	50.0	0.0
2011	20.0	0.0	50.0	0.0
2012	20.0	0.0	50.0	0.0
2013	20.0	0.0	50.0	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

- Foster leadership and economic development and facilitate strong partnerships and participation in state, regional, national, and international agencies, organizations, and groups.
- Develop collaborative, multidisciplinary approaches that respond to short- and long-term educational needs and issues.
- Encourage participation by extension specialists in: Taskforces, Review Committees, Advisory Boards, Editorial Boards, Commodity committees/boards, Invited presentations, Honors and Awards, Common Interest Groups, Professional Societies
- Complete "needs assessment" for each species
- Develop publications, workshops, consultations, seminars, certification programs, distance education modules, field days, and other opportunities.
- Increase number of participants in life-long learning programs.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Group Discussion</li> <li>● Demonstrations</li> <li>● Other 1 (Distance education events)</li> <li>● Education Class</li> <li>● One-on-One Intervention</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Other 1 (Publications)</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

- Poultry and Livestock Producers
- Farm employees
- Nutritionists and consultants
- Veterinarians
- Small flock/herd owners
- Youth
- Consumers
- County officials
- Government Officials

**V(G). Planned Program (Outputs)****1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	40000	200000	10000	50000
2010	40000	200000	10000	50000
2011	40000	200000	10000	50000
2012	40000	200000	10000	50000
2013	40000	200000	10000	50000



**2. (Standard Research Target) Number of Patent Applications Submitted****Expected Patent Applications**

**2009 :1                      2010 :1                      2011 : 1                      2012 :1                      2013 : 1**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	50	25	0
2010	50	25	0
2011	50	25	0
2012	50	25	0
2013	50	25	0

**V(H). State Defined Outputs****1. Output Target**

- Number of educational workshops and seminars offered to poultry and livestock producers

**2009 :50                      2010 :50                      2011 : 50                      2012 :50                      2013 :50**

- Number of research projects

**2009 :50                      2010 :50                      2011 : 50                      2012 :50                      2013 :50**

- Number of consultations

**2009 :25                      2010 :25                      2011 : 25                      2012 :25                      2013 :25**

- Number of Extension publications written, new or revised; websites developed

**2009 :50                      2010 :50                      2011 : 50                      2012 :50                      2013 :50**

- Number of K-12 classroom visits

**2009 :20                      2010 :20                      2011 : 20                      2012 :20                      2013 :20**

- Number of Extension publications distributed

**2009 :100                      2010 :100                      2011 : 100                      2012 :100                      2013 :100**

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of poultry and livestock producers and professionals who increase their knowledge of up-to-date information and technologies, management practices, and value-added opportunities
2	Number of poultry and livestock producers and professionals who adopt up-to-date information and technologies.
3	Number of livestock producers adopting practices to enhance sustainability of their operations.
4	Number of livestock producers expanding their operations.
5	Number of poultry and livestock producers utilizing animal welfare assessments to enhance their management systems.
6	Number of poultry and livestock producers and professionals who increased their knowledge of environmental stewardship practices and environmental regulations.
7	Number of poultry and livestock producers adopting management practices that maximize environmental stewardship.
8	Number of poultry and livestock producers and professionals developing comprehensive nutrient management plans.
9	Number of poultry and livestock producers who enhance soil fertility and reduce soil pollution through properly applied animal waste
10	Number of 4-H member Youth Quality Assurance certified
11	Number of adults Quality Assurance certified
12	Number of livestock tested for reproductive soundness
13	Number of livestock producers who increased their knowledge about alternative feedstuffs
14	Number of youth who gained knowledge about the livestock industry, animal feeding, and/or production

**Outcome #1****1. Outcome Target**

Number of poultry and livestock producers and professionals who increase their knowledge of up-to-date information and technologies, management practices, and value-added opportunities

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occuring Toxins, and Other Hazards Affecting Animals

**Outcome #2****1. Outcome Target**

Number of poultry and livestock producers and professionals who adopt up-to-date information and technologies.

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals

- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occuring Toxins, and Other Hazards Affecting Animals

**Outcome #3****1. Outcome Target**

Number of livestock producers adopting practices to enhance sustainability of their operations.

**2. Outcome Type :** Change in Condition Outcome Measure

**2009 :20                      2010 : 30                      2011 : 40                      2012 :50                      2013 : 50**

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occuring Toxins, and Other Hazards Affecting Animals

**Outcome #4****1. Outcome Target**

Number of livestock producers expanding their operations.

**2. Outcome Type :** Change in Condition Outcome Measure

**2009 :20                      2010 : 30                      2011 : 40                      2012 :50                      2013 : 10**

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 307 - Animal Management Systems

**Outcome #5****1. Outcome Target**

Number of poultry and livestock producers utilizing animal welfare assessments to enhance their management systems.

**2. Outcome Type :** Change in Condition Outcome Measure

**2009 :5                      2010 : 8                      2011 : 10                      2012 :12                      2013 : 10**

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 315 - Animal Welfare/Well-Being and Protection

**Outcome #6****1. Outcome Target**

Number of poultry and livestock producers and professionals who increased their knowledge of environmental stewardship practices and environmental regulations.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems

**Outcome #7****1. Outcome Target**

Number of poultry and livestock producers adopting management practices that maximize environmental stewardship.

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems

**Outcome #8****1. Outcome Target**

Number of poultry and livestock producers and professionals developing comprehensive nutrient management plans.

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems

**Outcome #9****1. Outcome Target**

Number of poultry and livestock producers who enhance soil fertility and reduce soil pollution through properly applied animal waste

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :2                      2010 : 2                      2011 : 2                      2012 :2                      2013 : 2

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems

**Outcome #10****1. Outcome Target**

Number of 4-H member Youth Quality Assurance certified

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :100                      2010 : 100                      2011 : 100                      2012 :100                      2013 : 100

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 307 - Animal Management Systems

**Outcome #11****1. Outcome Target**

Number of adults Quality Assurance certified

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :25                      2010 : 25                      2011 : 25                      2012 :25                      2013 : 25

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 307 - Animal Management Systems

**Outcome #12****1. Outcome Target**

Number of livestock tested for reproductive soundness

**2. Outcome Type :** Change in Action Outcome Measure

2009 :50                      2010 : 50                      2011 : 50                      2012 :50                      2013 : 50

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals

**Outcome #13****1. Outcome Target**

Number of livestock producers who increased their knowledge about alternative feedstuffs

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :50**2010** : 50**2011** : 50**2012** :50**2013** : 50**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 302 - Nutrient Utilization in Animals

**Outcome #14****1. Outcome Target**

Number of youth who gained knowledge about the livestock industry, animal feeding, and/or production

**2. Outcome Type :** Change in Knowledge Outcome Measure**2009** :500**2010** : 500**2011** : 500**2012** :500**2013** : 500**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 307 - Animal Management Systems

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Pricing systems for livestock and poultry tend to be very cyclical. As such research, to some degree and, especially extension programs, need to be responsive to rapid, and sometimes dramatic changes in economic viability of production units. Whole program focuses can change quickly in the face of an economic crisis in one or more of the livestock and poultry sectors.

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Case Study
- Observation
- Tests

**Description**

{NO DATA ENTERED}



## V(A). Planned Program (Summary)

### Program #10

#### 1. Name of the Planned Program

Economic and Community Development

#### 2. Brief summary about Planned Program

This planned program area includes five focus areas: Entrepreneurship, Community Planning and Visioning, Workforce Development, Leadership and Civic Engagement, and Public Issues Education. The following is a brief summary of these focus areas. Collectively they represent a summary of this planned program area.

**Entrepreneurship.** Economic development strategies have shifted from industrial recruitment to (a) the retention and expansion of existing firms and (b) the creation of new businesses. Specific areas of emphasis are small businesses, especially in rural areas; new opportunities in entrepreneurial agriculture and natural resource enterprises (e.g., agritourism); and the strong and growing interest in entrepreneurship among youth and young adults, women, ethnic minorities, and new immigrants.

**Community Planning and Visioning.** Communities, neighborhoods, and regions need to create their own road map for the future in today's fast paced world of change. Two areas of high priority in many communities and regions are economic development planning/strategies and land use issues. While Extension's visioning and planning efforts will not be limited to these areas, they will receive special emphasis.

**Workforce Development.**

Extension, in partnership with Purdue's Division of Continuing Education, has been heavily involved in creating several community based learning centers. These centers provide a variety of credit and non-credit offerings based entirely on local demand, using both face to face and distance-education technologies. Extension will continue to nurture existing learning centers and be as helpful as possible to other communities and neighborhoods that wish to consider the establishment of such a center. Workforce development opportunities and programs will receive special emphasis.

1. **Leadership and Civic Engagement.** A rapidly growing body of research indicates a strong civic infrastructure is a precursor to economic development and in the creation of strong and vibrant communities, neighborhoods, and regions. Extension can help build strong communities, neighborhoods, and community-based organizations through a variety of leadership programs including Leadership 20/20, i-LEaD, the Master Gardener Leadership Program, and a new Natural Resources Leadership Development Institute.

**Public Issues Education.** Purdue Extension is playing a key role in Purdue's university-wide engagement effort. When community and regional needs arise at the local level which cannot be addressed by an existing Extension program, Extension personnel can help identify and access specialized resources at Purdue that may be helpful in addressing the need or issue. Training and resources are also available to help communities manage controversial public issues. Finally, policy analysis and applied research by faculty on Purdue's campus is critical to informed decision making. Areas of potential emphasis include energy policy, agricultural and environmental policy, and a variety of issues related to state and local government taxation and finance.

3. **Program existence :** Intermediate (One to five years)

4. **Program duration :** Long-Term (More than five years)

5. **Expending formula funds or state-matching funds :** Yes

6. **Expending other than formula funds or state-matching funds :** Yes

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	80%		80%	
803	Sociological and Technological Change Affecting Individuals, Familie	3%		3%	
805	Community Institutions, Health, and Social Services	17%		17%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

There are at least two types of communities — communities of interest and communities of place. This planned program area primarily refers to communities of space or place — neighborhoods, cities and towns, counties, and economic regions. Just as other program areas have their own units of analysis - the individual, the family, the farm - this planned program area has its own unit of analysis - the community.

University faculty and staff focusing in this area have the goal of making a direct impact at the community level or in organizations within the community. This planned program area often involves public issues where collective decisions are made—in contrast to the private decisions made by individuals, families, and firms. Examples include educational programming targeted to local government officials, neighborhood associations and groups, and nongovernmental organizations.

#### 2. Scope of the Program

- Integrated Research and Extension
- Multistate Research
- Multistate Extension
- In-State Extension
- In-State Research
- Multistate Integrated Research and Extension

### V(D). Planned Program (Assumptions and Goals)

#### 1. Assumptions made for the Program

The concepts of community development, economic development, and economic growth are important to this planned program area. While related to one another, each of these concepts is quite different and is not viewed as synonymously in the planning and implementation of this planned program area. Economic growth refers to the entire economic pie getting bigger but is silent on the critical issue of who gets the various pieces of the pie. Economic development concerns itself with how the benefits of economic growth are being distributed. The concept of community development recognizes that there is more to a community than just its economy or economic base.

#### 2. Ultimate goal(s) of this Program

- Improve the capacity of communities to identify and address critical issues that impact the lives of its citizens.

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Create more sustainable, competitive local economic development systems.

•

Foster the development of organizations with representatives who build their community leadership skills and become more actively involved in community problem-solving.

**V(E). Planned Program (Inputs)****1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	4.0	0.0	2.0	0.0
2010	4.0	0.0	2.0	0.0
2011	4.0	0.0	2.0	0.0
2012	4.0	0.0	2.0	0.0
2013	4.0	0.0	2.0	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

- Workshops
- Extension publications
- Research
- Website Development
- IP Video Programs
- One-on-One Consultation
- Collaboration with other agencies

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

- Local elected officials
- Staff and volunteers of nonprofits/NGOs
- General Citizens

**V(G). Planned Program (Outputs)****1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	11000	60000	6000	35000
2010	11500	65000	6500	40000
2011	12000	70000	7000	45000
2012	12000	70000	7000	45000
2013	12000	70000	7000	45000

**2. (Standard Research Target) Number of Patent Applications Submitted****Expected Patent Applications**

**2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	6	0
2010	0	6	0
2011	0	6	0
2012	0	6	0
2013	0	6	0

**V(H). State Defined Outputs****1. Output Target**

- number of workshops conducted

**2009 :12                      2010 :12                      2011 :12                      2012 :12                      2013 :12**

- number of research projects

**2009 :3                      2010 :3                      2011 :3                      2012 :3                      2013 :3**

- number of publications

**2009 :6                      2010 :6                      2011 :6                      2012 :6                      2013 :6**

- number of collaborations with other agencies

**2009 :20                      2010 :20                      2011 :20                      2012 :20                      2013 :20**

- number of IP-video programs

**2009 :4                      2010 :4                      2011 :4                      2012 :4                      2013 :4**

- number of one-on-one consultations

2009 :36	2010 :36	2011 :36	2012 :36	2013 :36
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- number of web sites developed

2009 :3	2010 :4	2011 :4	2012 :4	2013 :4
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**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of communities that increase knowledge of how to identify and address critical issues for citizens
2	Number of communities engaged in issue identification and action planning
3	Number of communities who improve their capacity to identify and address critical issues that impact the lives of its citizens
4	Number of communities increasing knowledge related to creating sustainable and competitive local economic development systems
5	Number of communities creating more sustainable and competitive local economic development systems.
6	number of participants who are building their community leadership skills and becoming more active in community problem-solving.
7	number of participants becoming more active in community problem-solving efforts

**Outcome #1****1. Outcome Target**

Number of communities that increase knowledge of how to identify and address critical issues for citizens

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**Outcome #2****1. Outcome Target**

Number of communities engaged in issue identification and action planning

**2. Outcome Type :** Change in Action Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**Outcome #3****1. Outcome Target**

Number of communities who improve their capacity to identify and address critical issues that impact the lives of its citizens

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :15                      2010 : 20                      2011 : 30                      2012 :35                      2013 : 30

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**Outcome #4****1. Outcome Target**

Number of communities increasing knowledge related to creating sustainable and competitive local economic development systems

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**Outcome #5****1. Outcome Target**

Number of communities creating more sustainable and competitive local economic development systems.

**2. Outcome Type :** Change in Action Outcome Measure

2009 :15                      2010 : 20                      2011 : 30                      2012 :35                      2013 : 30

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**Outcome #6****1. Outcome Target**

number of participants who are building their community leadership skills and becoming more active in community problem-solving.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services



**Outcome #7****1. Outcome Target**

number of participants becoming more active in community problem-solving efforts

**2. Outcome Type :** Change in Action Outcome Measure

2009 :2400

2010 : 2600

2011 : 2800

2012 :3000

2013 : 3000

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programatic Challenges
- Public Policy changes
- Appropriations changes
- Competing Public priorities
- Government Regulations
- Economy
- Natural Disasters (drought,weather extremes,etc.)

**Description**

All of these external factors can impact community and economic development work. They will not likely change projected numbers but rather the content of programming. Adverse circumstances can actually increase participation as communities look for resources to assist them to deal with these factors

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- Retrospective (post program)
- After Only (post program)
- Before-After (before and after program)
- Case Study

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Case Study
- Other (electronic surveys)
- On-Site

**Description**

{NO DATA ENTERED}